IDEAL

BOILERS
RADIATORS
ACCESSORIES

1956

IDEAL

BOILERS
RADIATORS
ACCESSORIES

Offices and Works:
IDEAL BOILERS & RADIATORS LTD., HULL, YORKS.
Telephone: Hull Central 15020 *Telegrams:* Idealstan, Hull.

Showrooms:
IDEAL HOUSE, GREAT MARLBOROUGH STREET, LONDON, W.1.
Telephone: Gerrard 8686 *Telegrams:* Idealstan.

Provincial Offices:	*Telephone:*	*Telegrams:*
Birmingham : 1B Institute Rd., King's Heath, 14.	Highbury 1529	Idealstan.
Bristol : 46 Queen Square.	Bristol 23409	Idealstan.

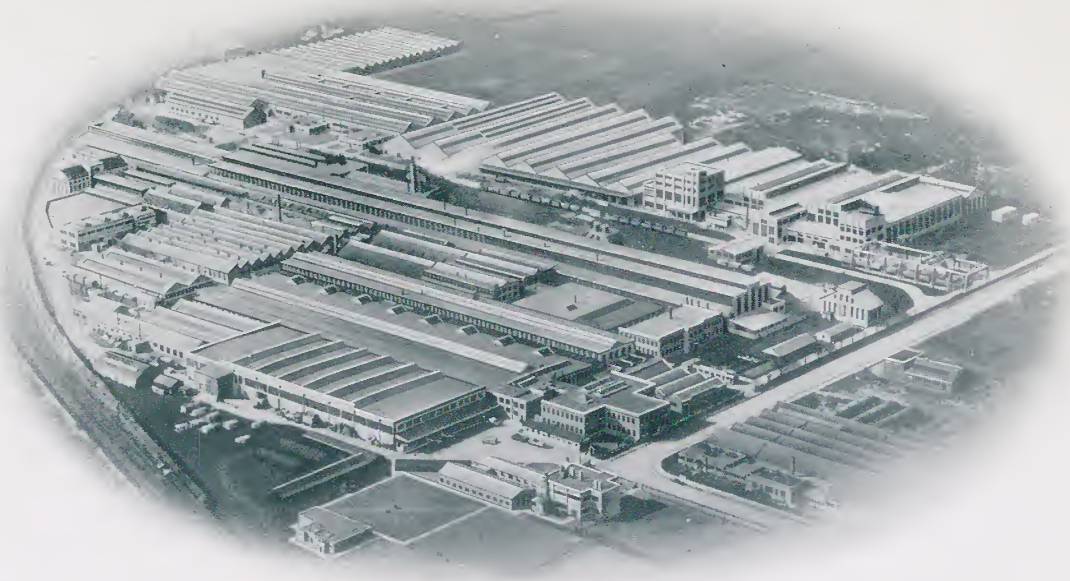
Warehouse:		
London : Palace of Engineering, Wembley.	Wembley 4321	Idealstan.

IDEAL-Standard

OUR TRADE MARK

This Trade Mark—associated with IDEAL-Standard products and literature—is a visible sign of long, trouble-free service. It stands for the very best in heating and sanitary equipment. Ideal Boilers, Radiators and Accessories have won for themselves an enviable reputation.

"Standard" Sanitary Appliances are renowned throughout the world. Our Trade Mark is recognised as a symbol of the quality which is justified by experience. When the public see this mark they *know* that the product can be acquired with confidence and is backed by an organisation long famous for the excellence of its design and workmanship. It is a mark that is as renowned as the products it identifies.



IDEAL WORKS, HULL. — AREA OVER 70 ACRES.

This Catalogue contains particulars and illustrations of all current Ideal Boilers and Ideal Radiators, and replaces our last Heating Catalogue published in June 1953. The method of presentation then introduced has been retained because we believe that it has succeeded in increasing the usefulness of the Catalogue as a book of ready reference to our range of Heating Products.

All Ideal Boilers and Radiators are subjected to a hydrostatic test pressure of 100 lb. per sq. inch, and are guaranteed only to the extent of furnishing new parts for any found defective in manufacture. No claim can be admitted (whether goods are accepted or not) for any other claims, charges, or expenses, or for consequential damages. The above is given in substitution for all other conditions or warranties, whether expressed or implied by the Sale of Goods Act, 1893, or otherwise.

At Ideal Works, Hull, we have two modern laboratories, each equipped with the latest apparatus: a Thermal Research Laboratory for the design and development of new products, and a Chemical Laboratory controlling all materials and processes. By rigid and accurate tests combined with the use of the best materials and manufacturing methods, we are able to ensure the highest standard of efficiency and reliability in Ideal Heating Appliances.

IDEAL BOILERS & RADIATORS LTD.

Hull, January 1956

INDEX

INDEX

IDEAL RADIATORS

NIPPLE CONNECTIONS AND TAPPINGS

Style of Radiator	Nipple Connections			* Tappings			
	Nominal Size, in.		Standard of Threads	Kind of Section	Inside Threads	Maximum Size, in.	
	Top	Btm.				Top	Btm
Neo-Classic No. 2	1	1	R. and L. pipe	Supply Return	R.H. pipe L.H. ,,	1 1	1 1
Neo-Classic Nos. 4 & 6 18 & 24 in.	1	1	,, ,,	Supply Return	R.H. ,, L.H. ,,	1 1	1 1
30 & 36 in.	1¼	1¼	,, ,,	Supply Return	R.H. ,, L.H. ,,	1¼ 1¼	1¼ 1¼
Neo-Hospital 3 in. width	1	1	,, ,,	Supply Return	R.H. ,, L.H. ,,	1 1	1 1
5¾ in. & 7¼ in. widths	1¼	1¼	,, ,,	Supply Return	R.H. ,, L.H. ,,	1¼ 1¼	1¼ 1¼
Neo-Classic Window	1¼	1¼	,, ,,	Supply Return	R.H. ,, L.H. ,,	1¼ 1¼	1¼ 1¼
Classic Wall	1	1	,, ,,	Supply Return	L.H. ,, R.H. ,,	1 1	1 1
Nos. 35, 36 & 36A	¾	¾	,, ,,	Supply Return	R.H. ,, L.H. ,,	¾ ¾	¾ ¾
Nos. 44, 45	1	1	,, ,,	—	—	1	1

* The outside tappings of these sections are R.H. pipe thread.

Size and position of tappings should be stated on order.

All radiator sections are assembled with internal nipples.

To Break Apart—The airvent is situated on return section; therefore, when breaking apart from return end the bar wrench must be turned to the left, except in the case of Classic Wall, when the wrench must be turned to the right. Chalk mark bar wrench to ensure breaking apart at the required joint.

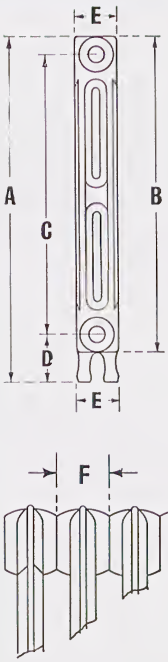
To Assemble—Thoroughly clean the thread of nipple and section. Paint the tapping in section with graphite mixed with water to the consistency of paint.

After placing a gasket on the top and bottom nipples, start the right-hand thread of each nipple one full turn into the radiator section before allowing the left-hand thread to enter the adjoining section. Screw the nipple in with a suitable bar wrench (a short length of bar iron flattened at one end to engage the nipple lugs). Be sure the left-hand thread enters immediately, so that the right-hand has a lead of only one thread. Ideal Radiator nipples are one thread longer on the right than on the left-hand, to accommodate this lead, ensuring equal tension. The right-hand thread is always on that half of nipple which has the assembling lug flush with edge.

When the top and bottom nipples are properly started in the sections, use a short key wrench and screw up the nipples evenly, keeping equal distances at top and bottom. Use a longer wrench for the last few threads, until the sections press hard on the gasket.

A 3-foot key wrench should suffice to complete assembling, and these, as well as proper bar wrenches, can be obtained on loan or purchased from Hull Works by the Trade. The work is facilitated if the radiator can be clamped down in some way after the nipples have been started.

The internal nipples for Ideal Radiators are of malleable iron, and preferably should not be used a second time, owing to compression, or reduction in diameter, having taken place in the first assembling.



Suitable for steam pressures up to 20 lb. sq. in.

DIMENSIONS IN INCHES						Heating Surface per Section	Water Capacity per Section
A	B	C	D	E	*F		
18	$16\frac{1}{8}$	$13\frac{25}{32}$	$3\frac{1}{8}$	$2\frac{5}{8}$	2	$\frac{3}{4}$ sq. ft.	·44 lb.
24	$22\frac{1}{32}$	$19\frac{11}{16}$	$3\frac{1}{8}$	$2\frac{5}{8}$	2	1 sq. ft.	·57 lb.
30	$27\frac{15}{16}$	$25\frac{19}{32}$	$3\frac{1}{8}$	$2\frac{5}{8}$	2	$1\frac{1}{3}$ sq. ft.	·83 lb.

* *End sections $\frac{1}{16}$ inch less.*

Can be supplied with or without feet. Wall Brackets and Stays, pages 29, 30, 32 and 33. Tappings, page 8. Accessories, pages 34, 35, 50, 51.

Fitted with Ideal Vent Plug, page 189.

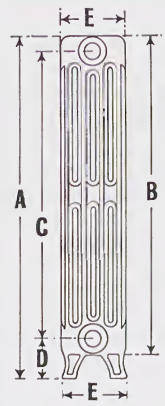
IDEAL NEO-CLASSIC RADIATOR No. 2

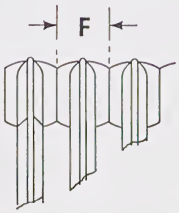
For Water or Steam

Number of Sections	* Length in Inches	HEATING SURFACE SQ. FT.		
		18″ HIGH	24″ HIGH	30″ HIGH
3	5 7/8	2 1/4	3	4
4	7 7/8	3	4	5 1/3
5	9 7/8	3 3/4	5	6 2/3
6	11 7/8	4 1/2	6	8
7	13 7/8	5 1/4	7	9 1/3
8	15 7/8	6	8	10 2/3
9	17 7/8	6 3/4	9	12
10	19 7/8	7 1/2	10	13 1/3
11	21 7/8	8 1/4	11	14 2/3
12	23 7/8	9	12	16
13	25 7/8	9 3/4	13	17 1/3
14	27 7/8	10 1/2	14	18 2/3
15	29 7/8	11 1/4	15	20
16	31 7/8	12	16	21 1/3
17	33 7/8	12 3/4	17	22 2/3
18	35 7/8	13 1/2	18	24
19	37 7/8	14 1/4	19	25 1/3
20	39 7/8	15	20	26 2/3
21	41 7/8	15 3/4	21	28
22	43 7/8	16 1/2	22	29 1/3
23	45 7/8	17 1/4	23	30 2/3
24	47 7/8	18	24	32
25	49 7/8	18 3/4	25	33 1/3
26	51 7/8	19 1/2	26	34 2/3
27	53 7/8	20 1/4	27	36
28	55 7/8	21	28	37 1/3
29	57 7/8	21 3/4	29	38 2/3
30	59 7/8	22 1/2	30	40

** In estimating length of Radiator, add 1 inch for bushings and plugs.*

State on order if required for steam.





Suitable for steam pressures up to 20 lb. sq. in.

DIMENSIONS IN INCHES						Heating Surface per Section	Water Capacity per Section
A	B	C	D	E	*F		
18	$16\frac{1}{8}$	$13\frac{25}{32}$	$3\frac{1}{8}$	$5\frac{5}{8}$	2	$1\frac{2}{5}$ sq. ft.	·91 lb.
24	$22\frac{1}{32}$	$19\frac{11}{16}$	$3\frac{1}{8}$	$5\frac{5}{8}$	2	2 sq. ft.	1·10 lb.
30	$28\frac{13}{32}$	$25\frac{19}{32}$	$3\frac{1}{2}$	$5\frac{5}{8}$	$2\frac{1}{4}$	$2\frac{3}{5}$ sq. ft.	1·88 lb.
36	$34\frac{5}{16}$	$31\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{5}{8}$	$2\frac{1}{4}$	$3\frac{1}{5}$ sq. ft.	2·20 lb.

* *End sections* $\frac{1}{16}$ *inch less.*

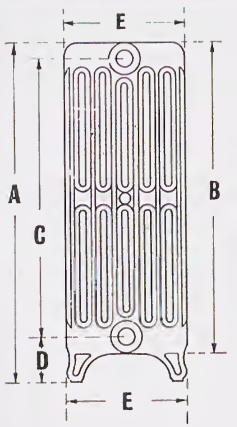
Can be supplied with or without feet. Wall Brackets and Stays, pages 29, 30, 32 and 33. Tappings, page 8. Accessories, pages 34, 35, 50 and 51. Solid high legs to give 6 in. or 8 in. centres, page 35. Fitted with Ideal Vent Plug, page 189. **State on order if required for steam.**

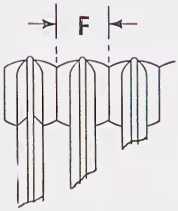
IDEAL NEO-CLASSIC RADIATOR No. 4

For Water or Steam

Number of Sections	* Length in Inches	HEATING SURFACE SQ. FT.	
		18″ HIGH	24″ HIGH
3	$5\frac{7}{8}$	$4\frac{1}{5}$	6
4	$7\frac{7}{8}$	$5\frac{3}{5}$	8
5	$9\frac{7}{8}$	7	10
6	$11\frac{7}{8}$	$8\frac{2}{5}$	12
7	$13\frac{7}{8}$	$9\frac{4}{5}$	14
8	$15\frac{7}{8}$	$11\frac{1}{5}$	16
9	$17\frac{7}{8}$	$12\frac{3}{5}$	18
10	$19\frac{7}{8}$	14	20
11	$21\frac{7}{8}$	$15\frac{2}{5}$	22
12	$23\frac{7}{8}$	$16\frac{4}{5}$	24
13	$25\frac{7}{8}$	$18\frac{1}{5}$	26
14	$27\frac{7}{8}$	$19\frac{3}{5}$	28
15	$29\frac{7}{8}$	21	30
16	$31\frac{7}{8}$	$22\frac{2}{5}$	32
17	$33\frac{7}{8}$	$23\frac{4}{5}$	34
18	$35\frac{7}{8}$	$25\frac{1}{5}$	36
19	$37\frac{7}{8}$	$26\frac{3}{5}$	38
20	$39\frac{7}{8}$	28	40
Number of Sections	*** Length in Inches**	**30″ HIGH**	**36″ HIGH**
3	$6\frac{5}{8}$	$7\frac{4}{5}$	$9\frac{3}{5}$
4	$8\frac{7}{8}$	$10\frac{2}{5}$	$12\frac{4}{5}$
5	$11\frac{1}{8}$	13	16
6	$13\frac{3}{8}$	$15\frac{3}{5}$	$19\frac{1}{5}$
7	$15\frac{5}{8}$	$18\frac{1}{5}$	$22\frac{2}{5}$
8	$17\frac{7}{8}$	$20\frac{4}{5}$	$25\frac{3}{5}$
9	$20\frac{1}{8}$	$23\frac{2}{5}$	$28\frac{4}{5}$
10	$22\frac{3}{8}$	26	32
11	$24\frac{5}{8}$	$28\frac{3}{5}$	$35\frac{1}{5}$
12	$26\frac{7}{8}$	$31\frac{1}{5}$	$38\frac{2}{5}$
13	$29\frac{1}{8}$	$33\frac{4}{5}$	$41\frac{3}{5}$
14	$31\frac{3}{8}$	$36\frac{2}{5}$	$44\frac{4}{5}$
15	$33\frac{5}{8}$	39	48
16	$35\frac{7}{8}$	$41\frac{3}{5}$	$51\frac{1}{5}$
17	$38\frac{1}{8}$	$44\frac{1}{5}$	$54\frac{2}{5}$
18	$40\frac{3}{8}$	$46\frac{4}{5}$	$57\frac{3}{5}$
19	$42\frac{5}{8}$	$49\frac{2}{5}$	$60\frac{4}{5}$
20	$44\frac{7}{8}$	52	64

* *In estimating length of Radiator, add 1 inch for bushings and plugs.*





Suitable for steam pressures up to 20 lb. sq. in.

DIMENSIONS IN INCHES						Heating Surface per Section	Water Capacity per Section
A	B	C	D	E	*F		
18	$16\frac{1}{8}$	$13\frac{25}{32}$	$3\frac{1}{8}$	$8\frac{5}{8}$	2	$2\frac{1}{10}$ sq. ft.	1·31 lb.
24	$22\frac{1}{32}$	$19\frac{11}{16}$	$3\frac{1}{8}$	$8\frac{5}{8}$	2	3 sq. ft.	1·68 lb.
30	$28\frac{13}{32}$	$25\frac{19}{32}$	$3\frac{1}{2}$	$8\frac{5}{8}$	$2\frac{1}{4}$	$4\frac{1}{10}$ sq. ft.	2 78 lb.
36	$34\frac{5}{16}$	$31\frac{1}{2}$	$3\frac{1}{2}$	$8\frac{5}{8}$	$2\frac{1}{4}$	5 sq. ft.	3·30 lb.

* *End sections* $\frac{1}{16}$ *inch less.*

Can be supplied with or without feet. Wall Brackets and Stays, pages 29, 30 and 33. Tappings, page 8. Accessories, pp. 34, 35, 50, 51. Solid high legs to give 6 in. or 8 in. centres, page 35. Fitted with Ideal Vent Plug, page 189. **State on order if required for steam.**

IDEAL NEO-CLASSIC RADIATOR No. 6

For Water or Steam

Number of Sections	* Length in Inches	HEATING SURFACE SQ. FT.	
		18″ HIGH	24″ HIGH
3	5 7/8	6 3/10	9
4	7 7/8	8 2/5	12
5	9 7/8	10 1/2	15
6	11 7/8	12 3/5	18
7	13 7/8	14 7/10	21
8	15 7/8	16 4/5	24
9	17 7/8	18 9/10	27
10	19 7/8	21	30
11	21 7/8	23 1/10	33
12	23 7/8	25 1/5	36
13	25 7/8	27 3/10	39
14	27 7/8	29 2/5	42
15	29 7/8	31 1/2	45
16	31 7/8	33 3/5	48
17	33 7/8	35 7/10	51
18	35 7/8	37 4/5	54
19	37 7/8	39 9/10	57
20	39 7/8	42	60
Number of Sections	*** Length in Inches**	**30″ HIGH**	**36″ HIGH**
3	6 5/8	12 3/10	15
4	8 7/8	16 2/5	20
5	11 1/8	20 1/2	25
6	13 3/8	24 3/5	30
7	15 5/8	28 7/10	35
8	17 7/8	32 4/5	40
9	20 1/8	36 9/10	45
10	22 3/8	41	50
11	24 5/8	45 1/10	55
12	26 7/8	49 1/5	60
13	29 1/8	53 3/10	65
14	31 3/8	57 2/5	70
15	33 5/8	61 1/2	75
16	35 7/8	65 3/5	80
17	38 1/8	69 7/10	85
18	40 3/8	73 4/5	90
19	42 5/8	77 9/10	95
20	44 7/8	82	100

* *In estimating length of Radiator, add 1 inch for bushings and plugs.*

Room Thermostat

"Ideal" Electric Radiators can be controlled either manually by switches or automatically by room thermostats, thus ensuring constant room temperatures. These thermostats are best placed 6 ft. from floor level on a wall away from draughts and sunlight, but not over the radiator.

Room Thermostats for temperature range 45°–75°, for A.C., 0–15 amp. capacity. Price **46/6d.** each.

3-heat D.P. Rotary Switch, 10-amp. capacity, for radiators of 1,500 and 2,000 watts only. Price **25/-** each.

The radiators are decorated in antique bronze finish.

IDEAL ELECTRIC RADIATOR

With Electric Immersion Heater

These water-filled radiators are specially intended for use in shops, offices, etc., where cleanliness and convenience of electric heating are desired without the risks which are inseparable from any type of heater having a luminous flame or element.

No installation cost is incurred—they only need plugging in to existing power points. They are economical and 100 per cent. efficient; moreover, they produce no fumes, or smell, nor excessive drying of the air.

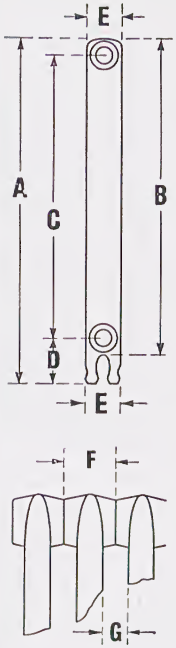
They are supplied in three sizes in each of three standard loadings of 1,000, 1,500 and 2,000 watts, suitable for 200/210, 220/230 and 240/250 volts A.C.

The voltage of the current available must be stated on order.

Type of Radiator	No. of Sections	Height in inches	†Length in inches	Width in inches	Wattage	*Prices £ s. d.
No. 4 Neo-Classic	8 10 12	36 30 24	17⅞ 22⅜ 23⅞	5⅝	1,000	11 6 3
No. 4 Neo-Classic	12 15 18	36 30 24	26⅞ 33⅝ 35⅞	5⅝	1,500	14 6 6
No. 4 Neo-Classic	16 20 24	36 30 24	35⅞ 44⅞ 47⅞	5⅝	2,000	18 8 3

* *Purchase Tax extra.*

† *Add 6½ inches to length to allow for projection of immersion heater and elbow filler.*



Suitable for steam pressures up to 20 lb. sq. in.

DIMENSIONS IN INCHES							Heating Surface per Section	Water Capacity per Section
A	B	C	D	E	*F	G		
18	$15\frac{7}{16}$	$12\frac{9}{16}$	4	3	2	1	$\frac{3}{4}$ sq. ft.	·85 lb.
24	$21\frac{7}{16}$	$18\frac{9}{16}$	4	3	2	1	1 sq. ft.	1·20 lb.
30	$27\frac{7}{16}$	$24\frac{9}{16}$	4	3	2	1	$1\frac{3}{10}$ sq. ft.	1·51 lb.

* *End sections $\frac{1}{8}$ inch less.*

Can be supplied with or without feet. Wall Brackets and Stays, pages 29, 30, 32 and 33. Tappings, page 8. Accessories, pp. 34, 35, 50 and 51.

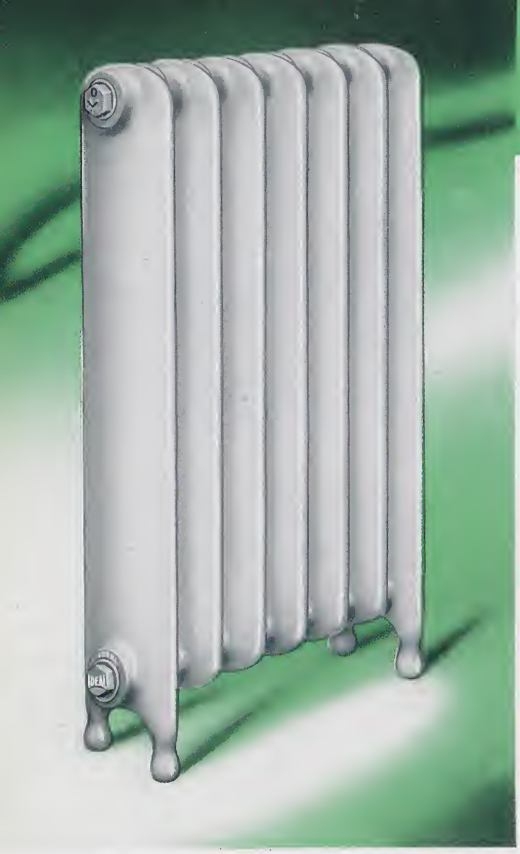
Fitted with Ideal Vent Plug, page 189.

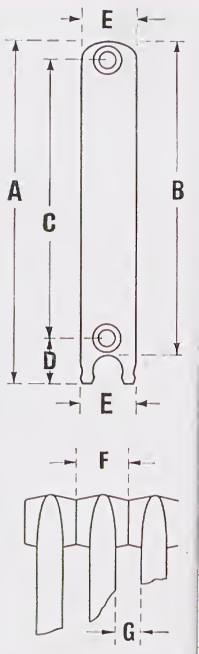
IDEAL NEO-HOSPITAL RADIATOR Width 3″

For Water or Steam

Number of Sections	* Length in Inches	HEATING SURFACE SQ. FT.		
		18″ HIGH	24″ HIGH	30″ HIGH
3	5¾	2¼	3	3 9/10
4	7¾	3	4	5⅕
5	9¾	3¾	5	6½
6	11¾	4½	6	7⅘
7	13¾	5¼	7	9 1/10
8	15¾	6	8	10⅖
9	17¾	6¾	9	11 7/10
10	19¾	7½	10	13
11	21¾	8¼	11	14 3/10
12	23¾	9	12	15⅗
13	25¾	9¾	13	16 9/10
14	27¾	10½	14	18⅕
15	29¾	11¼	15	19½
16	31¾	12	16	20⅘
17	33¾	12¾	17	22 1/10
18	35¾	13½	18	23⅖
19	37¾	14¼	19	24 7/10
20	39¾	15	20	26
21	41¾	15¾	21	27 3/10
22	43¾	16½	22	28⅗
23	45¾	17¼	23	29 9/10
24	47¾	18	24	31⅕
25	49¾	18¾	25	32½
26	51¾	19½	26	33⅘
27	53¾	20¼	27	35 1/10
28	55¾	21	28	36⅖
29	57¾	21¾	29	37 7/10
30	59¾	22½	30	39

* *In estimating length of Radiator, add 1 inch for bushings and plugs.*
State on order if required for steam.





Suitable for steam pressures up to 20 lb. sq. in.

DIMENSIONS IN INCHES							Heating Surface per Section	Water Capac per Sectior
A	B	C	D	E	*F	G		
18	$15\frac{3}{8}$	$12\frac{9}{16}$	4	$5\frac{3}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	$1\frac{1}{2}$ sq. ft.	2·13 lb.
24	$21\frac{3}{8}$	$18\frac{9}{16}$	4	$5\frac{3}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	2 sq. ft.	2·94 lb.
30	$27\frac{3}{8}$	$24\frac{9}{16}$	4	$5\frac{3}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	$2\frac{1}{2}$ sq. ft.	3·75 lb.
36	$33\frac{3}{8}$	$30\frac{9}{16}$	4	$5\frac{3}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	3 sq. ft.	4·56 lb.

* *End sections $\frac{1}{8}$ inch less.*

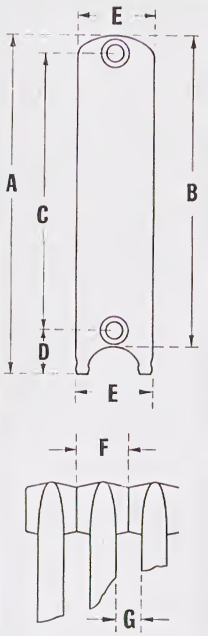
Can be supplied with or without feet. Wall Brackets and Stays, pages 29, 30, 32 and 33. Tappings, page 8. Accessories, pages 34, 35, 50 and 51. Solid high legs to give 6 in., 8 in. or 10 in. centres, page 35. Fitted with Ideal Vent Plug, page 189. **State on order if required for steam.**

IDEAL NEO-HOSPITAL RADIATOR Width 5 3/4"

For Water or Steam

Number of Sections	* Length in Inches	HEATING SURFACE SQ. FT.	
		18" HIGH	24" HIGH
3	7 5/8	4 1/2	6
4	10 1/4	6	8
5	12 7/8	7 1/2	10
6	15 1/2	9	12
7	18 1/8	10 1/2	14
8	20 3/4	12	16
9	23 3/8	13 1/2	18
10	26	15	20
11	28 5/8	16 1/2	22
12	31 1/4	18	24
13	33 7/8	19 1/2	26
14	36 1/2	21	28
15	39 1/8	22 1/2	30
16	41 3/4	24	32
17	44 3/8	25 1/2	34
18	47	27	36
19	49 5/8	28 1/2	38
20	52 1/4	30	40
Number of Sections	*** Length in Inches**	**30" HIGH**	**36" HIGH**
3	7 5/8	7 1/2	9
4	10 1/4	10	12
5	12 7/8	12 1/2	15
6	15 1/2	15	18
7	18 1/8	17 1/2	21
8	20 3/4	20	24
9	23 3/8	22 1/2	27
10	26	25	30
11	28 5/8	27 1/2	33
12	31 1/4	30	36
13	33 7/8	32 1/2	39
14	36 1/2	35	42
15	39 1/8	37 1/2	45
16	41 3/4	40	48
17	44 3/8	42 1/2	51
18	47	45	54
19	49 5/8	47 1/2	57
20	52 1/4	50	60

* *In estimating length of Radiator, add 1 inch for bushings and plugs.*



Suitable for steam pressures up to 20 lb. sq. in.

DIMENSIONS IN INCHES							Heating Surface per Section	Water Capacity per Section
A	B	C	D	E	*F	G		
18	$15\frac{5}{16}$	$12\frac{9}{16}$	4	$7\frac{1}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	$1\frac{9}{10}$ sq. ft.	2·88 lb.
24	$21\frac{5}{16}$	$18\frac{9}{16}$	4	$7\frac{1}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	$2\frac{1}{2}$ sq. ft.	4·03 lb.
30	$27\frac{5}{16}$	$24\frac{9}{16}$	4	$7\frac{1}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	$3\frac{1}{10}$ sq. ft.	5·18 lb.
36	$33\frac{5}{16}$	$30\frac{9}{16}$	4	$7\frac{1}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	$3\frac{7}{10}$ sq. ft.	6·33 lb.

* *End sections* $\frac{1}{8}$ *inch less.*

Can be supplied with or without feet. Wall Brackets and Stays, pages 29, 30 and 33. Tappings, page 8. Accessories, pages 34, 35, 50 and 51. Solid high legs to give 6 in., 8 in. or 10 in. centres, page 35. Fitted with Ideal Vent Plug, page 189. **State on order if required for steam.**

IDEAL NEO-HOSPITAL RADIATOR Width 7 1/4"

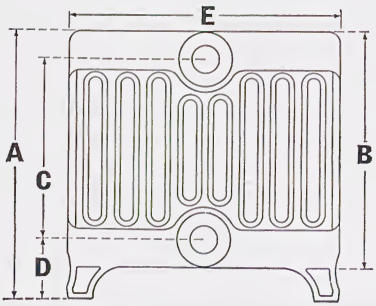
For Water or Steam

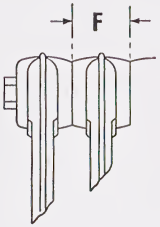
Number of Sections	* Length in Inches	HEATING SURFACE SQ. FT. 18" HIGH	24" HIGH
3	7 5/8	5 7/10	7 1/2
4	10 1/4	7 3/5	10
5	12 7/8	9 1/2	12 1/2
6	15 1/2	11 2/5	15
7	18 1/8	13 3/10	17 1/2
8	20 3/4	15 1/5	20
9	23 3/8	17 1/10	22 1/2
10	26	19	25
11	28 5/8	20 9/10	27 1/2
12	31 1/4	22 4/5	30
13	33 7/8	24 7/10	32 1/2
14	36 1/2	26 3/5	35
15	39 1/8	28 1/2	37 1/2
16	41 3/4	30 2/5	40
17	44 3/8	32 3/10	42 1/2
18	47	34 1/5	45
19	49 5/8	36 1/10	47 1/2
20	52 1/4	38	50

Number of Sections	* Length in Inches	30" HIGH	36" HIGH
3	7 5/8	9 3/10	11 1/10
4	10 1/4	12 2/5	14 4/5
5	12 7/8	15 1/2	18 1/2
6	15 1/2	18 3/5	22 1/5
7	18 1/8	21 7/10	25 9/10
8	20 3/4	24 4/5	29 3/5
9	23 3/8	27 9/10	33 3/10
10	26	31	37
11	28 5/8	34 1/10	40 7/10
12	31 1/4	37 2/5	44 2/5
13	33 7/8	40 3/10	48 1/10
14	36 1/2	43 2/5	51 4/5
15	39 1/8	46 1/2	55 1/2
16	41 3/4	49 3/5	59 1/5
17	44 3/8	52 7/10	62 9/10
18	47	55 4/5	66 3/5
19	49 5/8	58 9/10	70 3/10
20	52 1/4	62	74

* *In estimating length of Radiator, add 1 inch for bushings and plugs.*

Suitable for steam pressures up to 20 lb. sq. in.





DIMENSIONS IN INCHES						Heating Surface per Section	Water Capacity per Section
A	B	C	D	E	*F		
13	$11\frac{3}{8}$	$8\frac{9}{16}$	3	$13\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$ sq. ft.	2·35 lb.

* *End sections $\frac{1}{16}$ inch less.*

IDEAL NEO-CLASSIC WINDOW RADIATOR

For Water or Steam

Number of Sections	* Length in Inches	HEATING SURFACE SQ. FT. 13″ HIGH
3	$6\frac{5}{8}$	$7\frac{1}{2}$
4	$8\frac{7}{8}$	10
5	$11\frac{1}{8}$	$12\frac{1}{2}$
6	$13\frac{3}{8}$	15
7	$15\frac{5}{8}$	$17\frac{1}{2}$
8	$17\frac{7}{8}$	20
9	$20\frac{1}{8}$	$22\frac{1}{2}$
10	$22\frac{3}{8}$	25
11	$24\frac{5}{8}$	$27\frac{1}{2}$
12	$26\frac{7}{8}$	30
13	$29\frac{1}{8}$	$32\frac{1}{2}$
14	$31\frac{3}{8}$	35
15	$33\frac{5}{8}$	$37\frac{1}{2}$
16	$35\frac{7}{8}$	40
17	$38\frac{1}{8}$	$42\frac{1}{2}$
18	$40\frac{3}{8}$	45
19	$42\frac{5}{8}$	$47\frac{1}{2}$
20	$44\frac{7}{8}$	50
21	$47\frac{1}{8}$	$52\frac{1}{2}$
22	$49\frac{3}{8}$	55
23	$51\frac{5}{8}$	$57\frac{1}{2}$
24	$53\frac{7}{8}$	60
25	$56\frac{1}{8}$	$62\frac{1}{2}$
26	$58\frac{3}{8}$	65
27	$60\frac{5}{8}$	$67\frac{1}{2}$
28	$62\frac{7}{8}$	70
29	$65\frac{1}{8}$	$72\frac{1}{2}$
30	$67\frac{3}{8}$	75

* *In estimating length of Radiator, add 1 inch for bushings and plugs.*

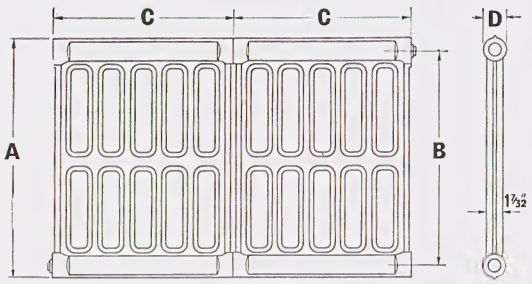
Can be supplied with or without feet. Wall Brackets, page 29. Tappings, page 8. Accessories, pages 34, 35, 50 & 51.

Fitted with Ideal Vent Plug, page 189.

State on order if required for steam.

Suitable for steam pressures up to 20 lb. sq. in.

30 inch, 24 inch and 18 inch—single section



DIMENSIONS IN INCHES				Heating Surface per Section	Water Capacity per Section
A	B	C	D		
18	$15\frac{15}{16}$	16	2	5 sq. ft.	3·74 lb.
24	$21\frac{15}{16}$	16	2	$6\frac{2}{3}$ sq. ft.	4·84 lb.
30	$27\frac{15}{16}$	16	2	$8\frac{1}{4}$ sq. ft.	5·39 lb.

Tappings, page 8. Wall Brackets and Stays, pages 31 and 33. Accessories, pages 34, 35, 50 and 51. Fitted with Ideal Vent Plug, page 189.

IDEAL CLASSIC WALL RADIATOR

For Water or Steam

Number of Sections	* Length in Inches	HEATING SURFACE SQ. FT.		
		18″ HIGH	24″ HIGH	30″ HIGH
1	16	5	$6\frac{2}{3}$	$8\frac{1}{4}$
2	32	10	$13\frac{1}{3}$	$16\frac{1}{2}$
3	48	15	20	$24\frac{3}{4}$
4	64	20	$26\frac{2}{3}$	33
5	80	25	$33\frac{1}{3}$	$41\frac{1}{4}$
6	† $96\frac{3}{4}$	30	40	$49\frac{1}{2}$
7	†$113\frac{1}{2}$	35	$46\frac{2}{3}$	$57\frac{3}{4}$
8	†$128\frac{3}{4}$	40	$53\frac{1}{3}$	66
9	†$145\frac{1}{2}$	45	60	$74\frac{1}{4}$
10	†$160\frac{3}{4}$	50	$66\frac{2}{3}$	$82\frac{1}{2}$
11	†$177\frac{1}{2}$	55	$73\frac{1}{3}$	$90\frac{3}{4}$
12	†$193\frac{1}{2}$	60	80	99
13	†$209\frac{1}{2}$	65	$86\frac{2}{3}$	$107\frac{1}{4}$
14	†$225\frac{1}{2}$	70	$93\frac{1}{3}$	$115\frac{1}{2}$
15	†$241\frac{1}{2}$	75	100	$123\frac{3}{4}$

* *Add 1 inch for bushings and plugs.*

† *Including hexagon nipples, see below.*

ASSEMBLING AND DESPATCH

The sections of these radiators are connected together with 1 in. right and left-hand threaded internal nipples, and are despatched assembled unless otherwise ordered; but where radiators exceed five sections, they are forwarded in two or more pieces with the necessary hexagon nipples for assembling them together. Particulars will be sent on application to enable position of brackets to be determined. If desired, internal instead of hexagon nipples will be supplied, in which case the lengths given in table for radiators of six sections or over will not apply, as only the usual one inch for bushings and plugs should then be added.

State on order if required for steam.

AVERAGE RADIATOR TRANSMISSIONS

B.T.U. per sq. ft. per degree difference per hour

IDEAL RADIATORS	Placed $2\frac{3}{8}$ in. from wall except Classic Wall fixed on standard brackets		With flat shelf or deflecting shield fixed $3\frac{1}{4}$ in. above radiator		In open recess; distance from top of radiator to top of recess $3\frac{1}{4}$ in.		Encased with ample free air space	
	Water 160-60	Steam 215-60	Water 160-60	Steam 215-60	Water 160-60	Steam 215-60	Water 160-60	Steam 215-60
Neo-Classic No. 2	1·85	2·11	1·78	2·03	1·70	1·94	1·48	1·68
,, ,, No. 4	1·70	1·94	1·63	1·86	1·55	1·78	1·36	1·55
,, ,, No. 6	1·60	1·82	1·53	1·75	1·47	1·68	1·28	1·46
,, ,, Window*	1·58	1·79	1·52	1·72	1·45	1·67	1·25	1·43
Neo-Hospital 3 in.	1·85	2·11	1·78	2·03	1·70	1·94	1·48	1·68
,, $5\frac{3}{4}$ in.	1·58	1·79	1·52	1·72	1·45	1·67	1·25	1·43
,, $7\frac{1}{4}$ in.	1·50	1·70	1·44	1·63	1·39	1·59	1·20	1·38
Classic Wall	1·70	1·94	1·63	1·86	1·55	1·78	1·36	1·55

* *Neo-Classic Window Radiator fixed under seat, but without hangings in front; air space top and back,* $3\frac{1}{4}$ *in. Water,* 1·08*; Steam,* 1·24.

TRANSMISSION TABLE

For Radiators placed $2\frac{3}{8}$ in. from wall*†. B.T.U. per sq. ft. per hour.

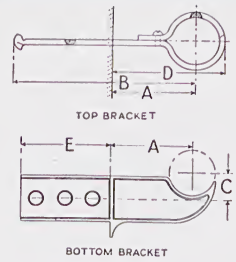
Ideal Radiators	Temperature Difference (Degrees Fahrenheit)							
	Water						Steam	
	70	80	90	100	110	120	155	160
Neo-Classic No. 2	116	139	162	185	208	234	327	340
,, ,, No. 4	106	128	149	170	192	215	300	312
,, ,, No. 6	100	120	140	160	180	202	282	294
,, ,, Window	99	119	138	158	178	199	278	290
Neo-Hospital 3 in.	116	139	162	185	208	234	327	340
,, $5\frac{3}{4}$ in.	99	119	138	158	178	199	278	290
,, $7\frac{1}{4}$ in.	94	113	131	150	169	189	264	275
Classic Wall	106	128	149	170	192	215	300	312

* *The transmission is approximately the same when the Radiator is placed* $1\frac{1}{2}$ *in. or more from the wall.*

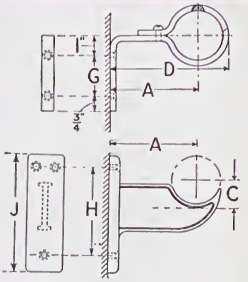
† *Exception is Classic Wall fixed on standard brackets with* 2 *in. centres.*

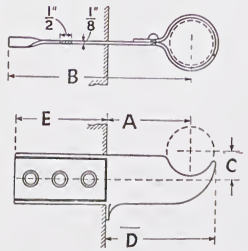
IDEAL WALL BRACKETS

For Ideal Neo-classic and Neo-Hospital Radiators

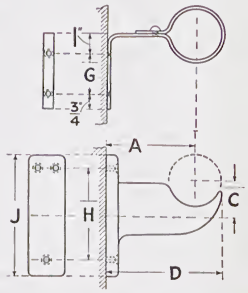


Top and Bottom Brackets for Neo-Classic Radiators





Top and Bottom Brackets for Neo-Hospital Radiators (Easy-clean)



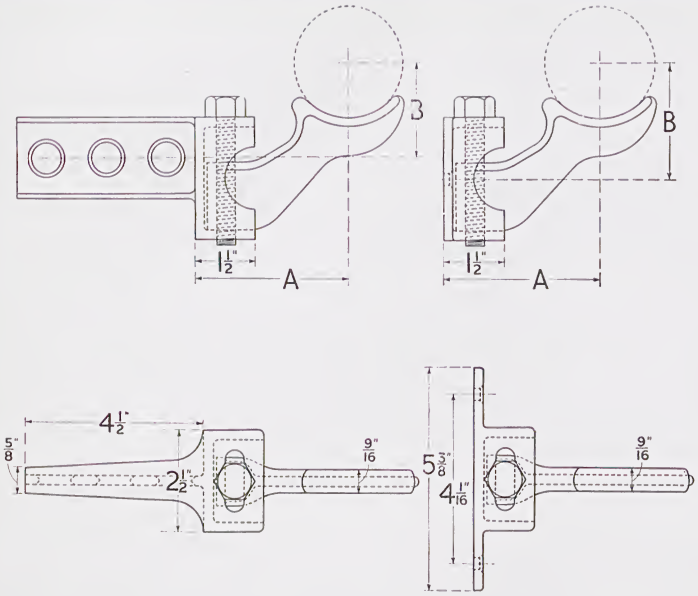
Suitable for Radiators	DIMENSIONS IN INCHES								Price with Standard Shank		Price with Shank 4½" longer	
	A	B	C	D	E	G	H	J	Top each	Btm. each	Top each	Btm. each
Neo-Classic No. 2	2 13/16	8¼	1 3/16	4	4¾	1½	3½	4½	1/10	2/2	2/6	2/11
Neo-Classic No. 4 18" & 24" / 30" & 36"	4 5/16	9¾	1 7/16	5½	4¾	2	4½	6	1/10	2/2	2/6	2/11
	4 5/16	9¾	1 7/16	5¾	4¾	2	4½	6	1/10	2/2	2/6	2/11
Neo-Classic No. 6 18" & 24" / 30" & 36"	5 13/16	11¼	1 7/16	7	4¾	2	4½	6	1/10	3/2	2/6	4/5
	5 13/16	11½	1 7/16	7¼	4¾	2	4½	6	1/10	3/2	2/6	4/5
Neo-Classic Window	8	—	1 7/16	—	5	—	—	—	2/-	3/7	2/7	4/10
Neo-Hospital 3 in.	3	8¼	1 3/16	4	4¾	1½	3¼	4½	1/10	2/2	2/6	2/11
„ 5¾ in.	4⅜	9¾	1 7/16	5¾	4¾	2	4½	6	1/10	2/2	2/6	2/11
„ 7¼ in.	5⅛	11¼	1 7/16	6 9/16	4¾	2	4½	6	1/10	3/2	2/6	4/5

* Building-in pattern brackets to give 2 in. between radiator and wall can be supplied to special order.

When ordering, state type and height of radiator.

ADJUSTABLE TOP BRACKETS

For Ideal Neo-classic and Neo-Hospital Radiators



Provides adjustment of 1 inch, both horizontal and vertical. The vertical adjustment is obtained by means of a ½ inch bolt.

Suitable for Neo-Classic Radiators	Inches		Price each	Suitable for Neo-Hospital Radiators	Inches		Price each
	A	*B			A	*B	
No. 2	2 13/16	1 15/16	5/10				
No. 4 (36 & 30 in.)	4 3/8	2 1/4	5/10	3 in. width	3	1 5/16	5/10
No. 4 (24 & 18 in.)	4 3/8	2 1/16	5/10	5 3/4 in. width	4 3/8	2 1/4	5/10
No. 6 (36 & 30 in.)	5 7/8	2 1/4	7/4	7 1/4 in. width	5 1/8	2 1/4	7/4
No. 6 (24 & 18 in.)	5 7/8	2 1/16	7/4				

* Minimum. **When ordering, state type and height of radiator.**

IDEAL WALL BRACKETS

For Ideal Classic Wall Radiators

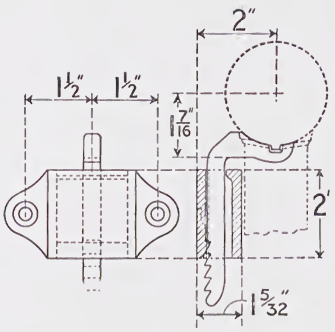


FIG. 2. TOP BRACKET

with vertical and horizontal adjustment. Rag bolts can be supplied.

Two brackets are sufficient for a radiator of average length. They can be supplied drilled and countersunk for wood screws.

Price of brackets **2/9d.** *each.*
Rag bolts **9½d.** *each.*

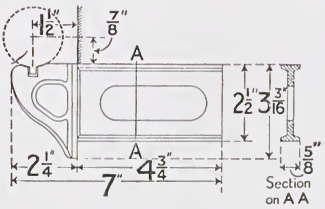
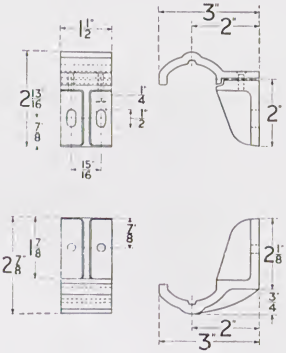


FIG. 3. TOP BRACKET

for building into wall.

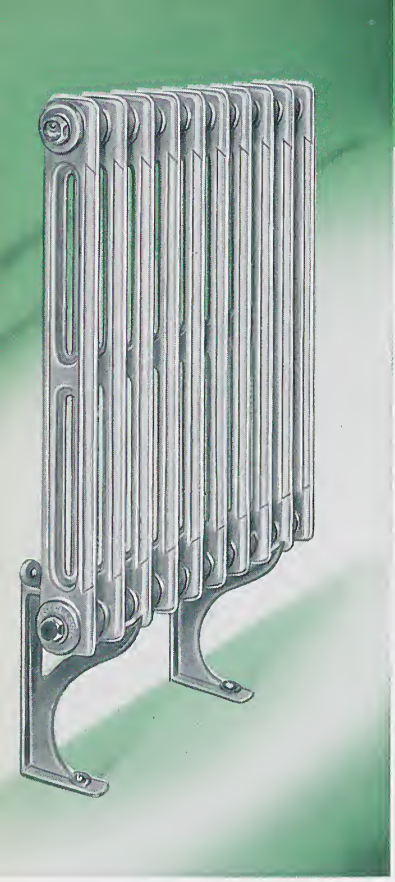
Price of brackets **2/6d.** *each.*



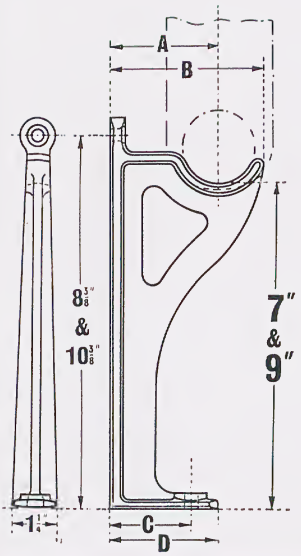
TYPE 'C' BRACKET

for screwing to wood, is in two separate parts. The top half is made in two sections to facilitate fixing. Top and bottom half supplied as a complete bracket.

Price, bracket complete **2/6d.**



IDEAL FLOOR SUPPORTS



Suitable for Ideal Radiators	Inches				Price each	
	A	B	C	D	7 in.	9 in.
No. 2 Neo-Classic Neo-Hospital 3 in.	3	4¼	2¼	3	4/3	5/6
No. 4 Neo-Classic Neo-Hospital 5¾ in.	4⅜	5 11/16	3¼	4⅜	4/3	5/6

When ordering, state type of radiator, and size of supports required.

IDEAL RADIATORS SUPPORTS

Ideal Floor Supports are designed as an alternative means of fixing Ideal Radiators where wall brackets or feet are not practicable. They are particularly suitable for use in prefabricated buildings where it is desirable not to put too much weight upon the walls, but are also highly satisfactory for schools, hospitals and similar institutions.

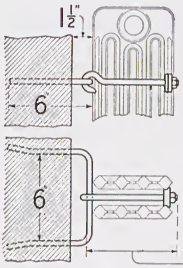
They are neat in appearance and do not project beyond the radiator itself.

These supports are easily fixed in position by means of a screw through the foot of the bracket and provision is made for screwing to the wall where greater security is necessary. Both Fixing Holes are $\frac{3}{8}$" in diameter.

WALL STAYS

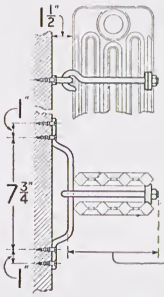
For Ideal Neo-Classic, Classic Wall, and Neo-Hospital Radiators.
PRICE **2/2d.** each. For building-in or screwing to wood.
Extra for C.P. brass domed nut, **10d.** each.

When ordering, state type and height of radiator.



2¼" For Classic Wall
3¼" For No. 2 Neo-Classic
6¼" " " 4 " "
9¼" " " 6 " "
3⅝" For 3" Neo-Hospital
6" " 5¾" " "
7¾" " 7¼" " "

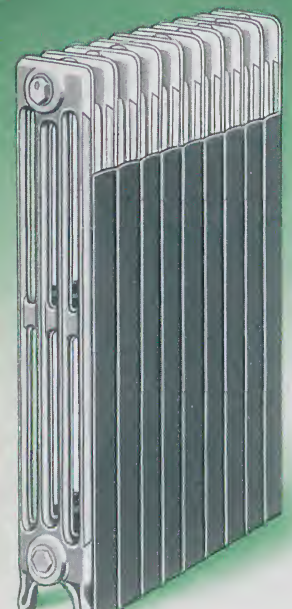
For building-in.



2¼" For Classic Wall
3¼" For No. 2 Neo-Classic
6¼" " " 4 " "
9¼" " " 6 " "
3⅝" For 3" Neo-Hospital
6" " 5¾" " "
7¾" " 7¼" " "

For wood screws.

Classic Wall Radiators, distance from wall to back of radiator, 1 inch.



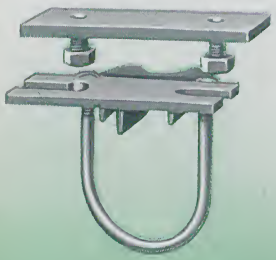
IDEAL DETACHABLE STEEL BAFFLE PLATES

For one side only of Radiator, to reach floor level (long pattern), or bottom hub (short pattern).

State which required.

Price per Radiator section for Ideal Neo-Classic and Ideal Neo-Hospital 1/3

Height of Radiator	30″	36″	24″	18″
Height of plates—				
Long pattern	24″	24″	18″	14″
Short „	21″	21″	15″	11″



IDEAL IMPROVED ADJUSTABLE RADIATOR SADDLES

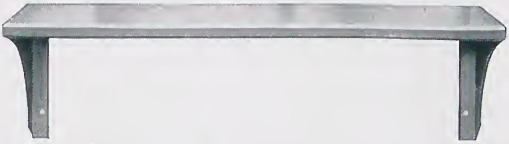
These Saddles are supplied in pairs, i.e. one right-hand and one left-hand. They permit a horizontal adjustment up to half an inch.

The top or shelf is easily removed at any time for cleaning.

When ordering, specify pattern of Radiator.

Price per pair (R. and L. H.) complete 9/5

IDEAL RADIATOR ACCESSORIES



IDEAL RADIATOR TOPS. Made of sheet metal for fixing to wall by wood screws. The tops are 4 inches longer than the Radiators.

Width of Top	Type of Radiator	† Prices	
		For Radiator of 6 sections	Over 6 sections extra per section
5 inches	Neo-Classic No. 2	15/6	1/1
8 ,,	,, ,, No. 4*	17/1	1/2
11 ,,	,, ,, No. 6*	18/10	1/3
5 ,,	Neo-Hospital 3 in. width	15/6	1/1
8 ,,	,, ,, $5\frac{3}{4}$ in. ,,	17/1	1/2
$9\frac{1}{4}$,,	,, ,, $7\frac{1}{4}$ in. ,,	18/10	1/3
Width	**Type of Radiator**	**For radiator of 2 sections**	**Over 2 sections extra per section**
5 inches	Classic Wall	24/6	7/4

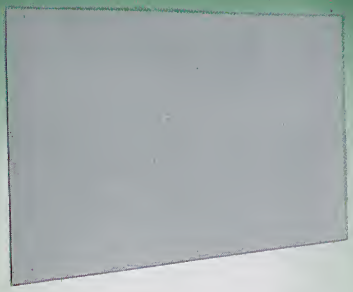
**State height of radiator.* *† Purchase Tax extra.*

SOLID HIGH LEGS. Radiators can be supplied with end sections having solid high legs as follows:—Ideal Neo-Classic Nos. 4 and 6 to give a distance from floor to centre of bottom tapping of 6 or 8 inches. Ideal Neo-Hospital, $5\frac{3}{4}$ in. and $7\frac{1}{4}$ in. widths to give a distance from floor to centre of bottom tapping of 6, 8 or 10 inches. Price extra per Radiator **13/2**

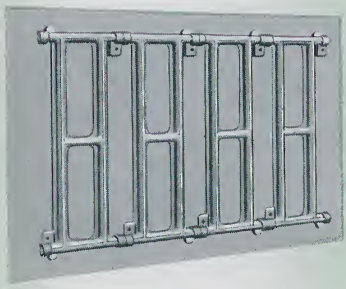
PEDESTALS. For Neo-Classic Nos. 4 and 6, and Neo-Hospital $5\frac{3}{4}$ and $7\frac{1}{4}$ in. widths.

Price per Set of Four.

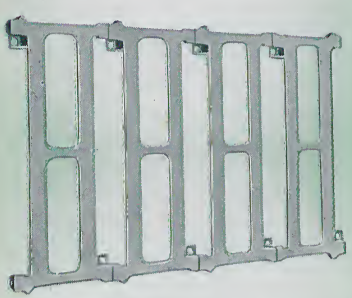
$\frac{1}{2}$, 1 and $1\frac{1}{2}$ in.	5/8	4 in.	8/4
2 in.	6/3	5 ,, ...	9/9
$2\frac{1}{2}$,, ...	7/5	6 ,, ...	10/8
3 ,, ...	7/5	7 ,, ...	13/9
$3\frac{1}{2}$,, ...	7/5	8 ,, ...	16/9



Front view No. 35



Back view No. 35



Front view of sections without plate

The No. 35 Ideal Rayrad possesses the valuable features of lightness and adaptability, and is suitable for fixing to ceilings, walls and floors. It is made in sections comprising a series of waterways which, being of cast iron, are free from corrosion troubles. One side of these waterways is shaped to provide a flat surface to which a specially rolled 14 gauge steel plate is screwed, thus forming the front of the Rayrad and providing a smooth and continuous face.

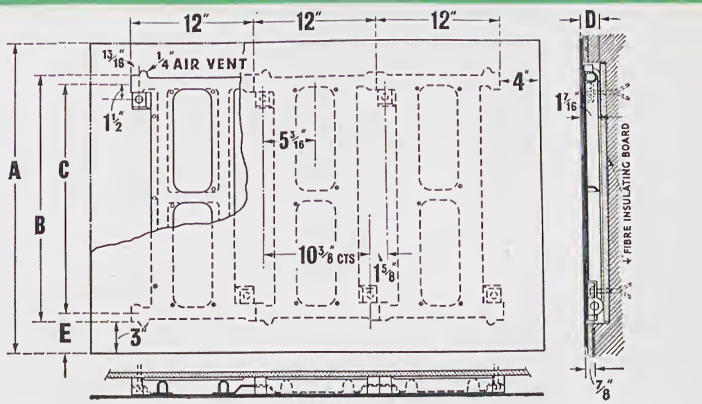
The standard plate extends 3 in. top and bottom and 4 in. each side beyond the sections; the size of plate can, however, be varied to meet architectural requirements, and where the conditions call for larger surface area than the regular sizes obtainable, it will be supplied in suitable sheets to make the least number of joints.

When fitted on wall a $\frac{1}{4}$ in. flush airvent can be provided at top left or right-hand corner as in diagram on opposite page. If air is vented through flow connection, this airvent is unnecessary. Position of tappings, when viewed from front, to be stated on order, and if airvent is needed, position should be specified, viz. left or right-hand top corner.

Metallic paints should not be used for decoration.

IDEAL RAYRAD No. 35

For Water or Steam



DIMENSIONS IN INCHES

Total height of standard plate **A**	Height of section **B**	Centre to centre of tappings **C**	Depth of section including plate **D**	Distance from edge of standard plate to centre of tappings **E**	Water capacity per section
13	12	10	$1\frac{3}{4}$	$1\frac{1}{2}$	1·00 lb.
18	12	10	$1\frac{3}{4}$	4	1·00 lb.
24	18	16	$1\frac{3}{4}$	4	1·20 lb
30	24	22	$1\frac{3}{4}$	4	1·35 lb.
36	30	28	$1\frac{3}{4}$	4	1·50 lb.

Suitable for steam pressures up to 20 lb. sq. in.

The sections are connected together with $\frac{3}{4}$ in. right and left-hand threaded internal nipples. They are despatched in any size up to a maximum of 10 sections in length and with steel plate to suit. The heating surface should be divided into two or more individual radiators, rather than exceed the length mentioned.

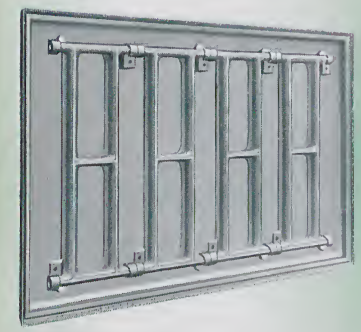
Plates larger than standard sizes can be supplied.

When ordering, specify both height of section and plate.

Transmission tables, page 48. Concealed valves, page 186.
Brackets and Fixing details, page 44. Face dimensions, page 45.

Size of tappings, $\frac{3}{4}$ inch.

Front view No. 36 and 36A



Back view No. 36 and 36A

Front view of sections without plate

The No. 36 Ideal Rayrad is similar in construction to the No. 35, but the edges of the plate are curved to enable the Rayrad to be fixed on the face of the wall or ceiling in circumstances where flush fixing is not desired. As in this event close contact must be made to prevent leakage of air, with consequent streaking, the curved edges are provided with a groove as shown, and suitable asbestos rope is supplied for fitting therein to make a joint and ensure an airtight fit against the insulating board. The rope should be held in position by an adhesive while the Rayrad plate is being fixed.

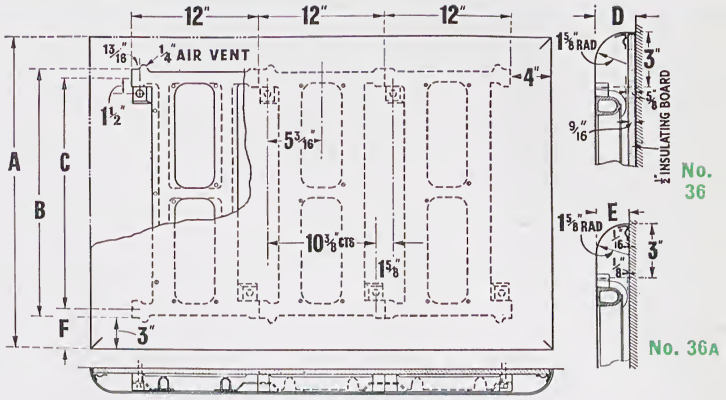
The No. 36A is similar to the No. 36 except that the plate projection (E dimension) is less. It is intended for situations where the insulation is embodied in the surface of the wall.

Details concerning the standard plate and a $\frac{1}{4}$ inch flush airvent (if required) are identical in all respects with those of the No. 35 Rayrad (page 36).

Metallic paints should not be used for decoration.

IDEAL RAYRAD Nos. 36 & 36A

For Water or Steam



DIMENSIONS IN INCHES

Total height of standard plate	Height of section	Centre to centre of tappings	Depth including plate No. 36	Depth including plate No. 36A	Distance from edge of standard plate to centre of tappings	Water capacity per section
A	B	C	D	E	F	
18	12	10	$2\frac{5}{16}$	$1\frac{13}{16}$	4	1·00 lb.
24	18	16	$2\frac{5}{16}$	$1\frac{13}{16}$	4	1·20 lb.
30	24	22	$2\frac{5}{16}$	$1\frac{13}{16}$	4	1·35 lb.
36	30	28	$2\frac{5}{16}$	$1\frac{13}{16}$	4	1·50 lb.

Suitable for steam pressures up to 20 lb. sq. in.

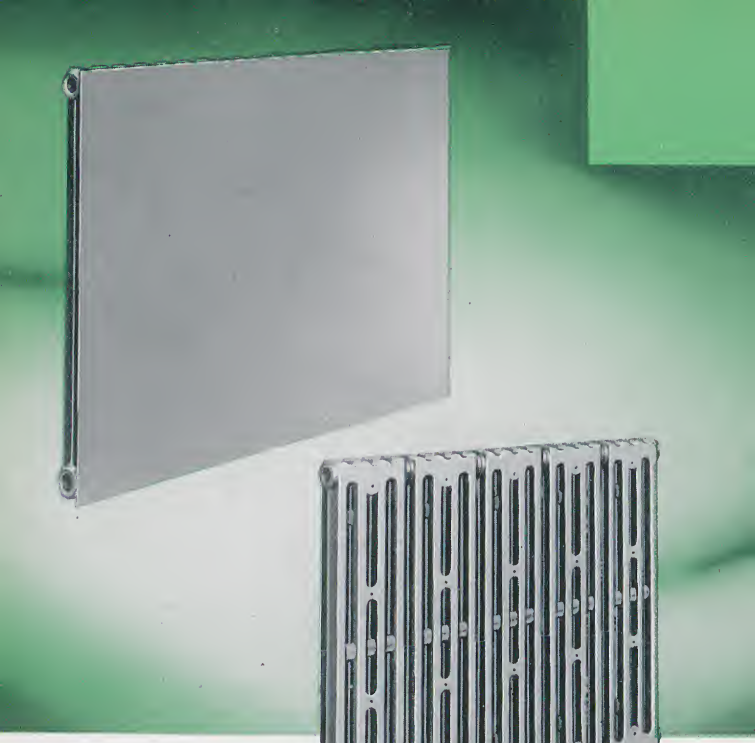
The sections are connected together with $\frac{3}{4}$ in. right and left-hand threaded internal nipples. They are despatched in any size up to a maximum of 10 sections in length and with steel plate to suit. The heating surface should be divided into two or more individual radiators, rather than exceed the length mentioned.

Plates larger than standard sizes can be supplied.

When ordering, specify both height of section and plate.

Transmission tables, page 48. Concealed Valves, page 186.
Brackets and Fixing details, page 44. Face Dimensions, page 45.

Size of tappings, $\frac{3}{4}$ inch.



No. 44 front view.

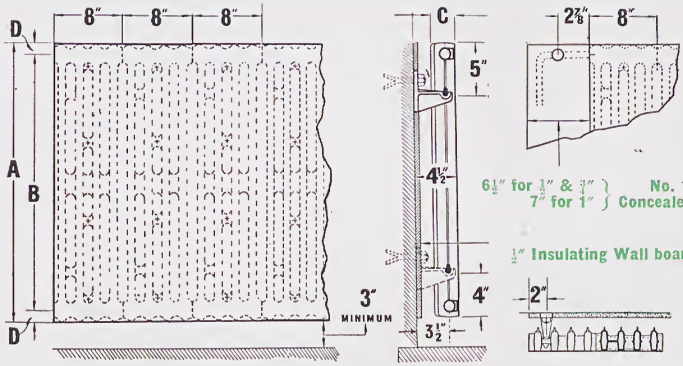
No. 44 front view with face plate removed.

The No. 44 Rayrad is primarily intended for fixing in window recesses and consists of cast-iron sections to the face of which are screwed specially flattened 14-gauge steel plates. The sections comprise a series of vertical waterways joined together at top and bottom. These vertical waterways are elongated at the back and finished with a fin, thus providing considerable convective heating surface. Each section is 8 in. wide, and available in three heights—18 in., 24 in., and 30 in. The sections are connected together with 1 in. right and left-hand threaded internal nipples; they are despatched assembled up to 12 sections in length, unless otherwise ordered. When ordered above this length the additional sections are sent loose with the necessary nipples for assembling.

Metallic paints should not be used for decoration.

IDEAL RAYRAD No. 44

For Water or Steam



DIMENSIONS IN INCHES

Height of standard plate and of section A	Centre to centre of tappings B	Depth of section including plate C	Distance from edge of standard plate to centre of tappings D	Water capacity per section
18	15½	2⅝	1¼	3·1 lb.
24	21½	2⅝	1¼	3·8 lb.
30	27½	2⅝	1¼	4·6 lb.

Suitable for steam pressures up to 20 lb. sq. in.

The depth of the section including face plate is 2⅝ in., and in order to secure efficient transmission it should be fixed with the front face 4½ in. from the finished wall surface and a minimum clearance of 3 in. above floor level. The wall behind the Rayrad should be covered with suitable insulating wall board. Plates larger than standard size can be supplied.

No. 13B Concealed Straight Valve with non-rising spindle (see page 186) can be supplied for use with the No. 44 Rayrad. Minimum dimensions for extended face plate are shown above. Indicate position for concealed valve on order. A ¼ in. flush airvent on face (or ⅜ in. airvent to top) of section can be provided without extra charge. Position of tappings, when viewed from front, to be stated on order. In estimating length of Rayrad, allow 1 in. for bushings and plugs. Transmission tables, page 48. Brackets and Fixing details, page 46.

Size of tappings, 1 inch.

No. 45 front view.

No. 45 front view with face plate removed.

The No. 45 Ideal Rayrad is supplied with a specially designed enclosure with detachable top, which renders it particularly suitable for fitting against any flat wall surface where an unobtrusive appearance or a saving of space is desired.

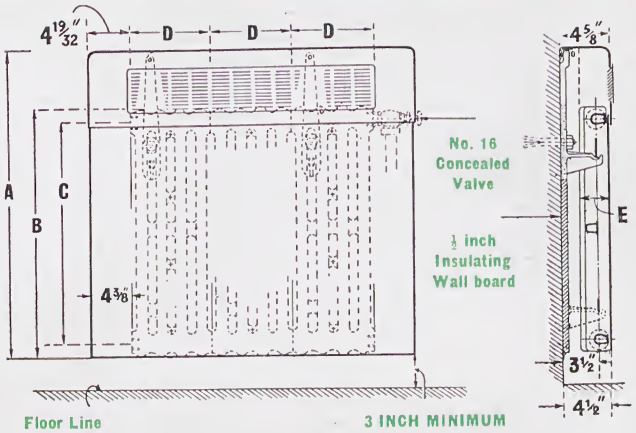
The cast-iron sections are identical with those of the No. 44 type, but the face plate, shaped to form an enclosure, is screwed in the normal way to the cast-iron sections. The sections are supported from the wall on adjustable brackets detailed on page 47.

Free circulation of air over the back of the Rayrad is ensured by the standard openings in the detachable grill at the top of the face plate. The size of openings varies according to the height of section used. The No. 45 Rayrad must be positioned to provide a minimum clearance of 3 in. from the bottom of the face plate to floor level. The Ideal Rayrad No. 45 is available assembled from 3 to 12 sections and is supplied with the enclosure painted in grey priming paint.

Metallic paints should not be used for decoration.

IDEAL RAYRAD No. 45

For Water or Steam



DIMENSIONS IN INCHES

Total height of standard enclosure	Height of section	Centre to centre of tappings	Width of sections	Depth of section including plate	Water capacity per section
A	B	C	D	E	
23	18	15½	8	2⅝	3·1 lb.
29¼	24	21½	8	2⅝	3·8 lb.
36¼	30	27½	8	2⅝	4·6 lb.

Suitable for steam pressures up to 20 lb. sq. in.

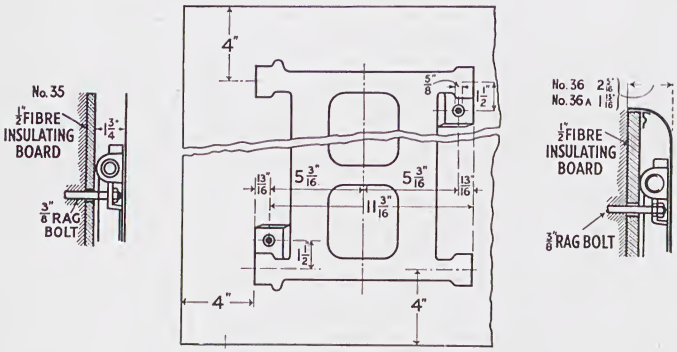
A ¼ in. flush air vent on face of section can be provided without extra charge. State requirements on order. In estimating length of waterway, add 1 in. for bushings and plugs.

Nos. 15 or 16 Concealed Angle Valves with non-rising spindle (see page 186) can be supplied. Indicate position for concealed valve on order.

Transmission tables, page 48. Brackets and Fixing details, page 47.

Size of tappings, 1 inch.

IDEAL RAYRAD Nos. 35, 36 and 36A

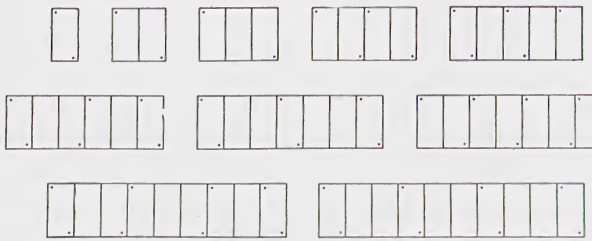


View from the back.

Each section is cast with lugs at top and bottom opposite corners, having cored holes for $\frac{3}{8}$ in. rag bolts (available at extra cost), and allowing slight lateral adjustment. After completing the fixing of radiator and connections the sheet-steel plate is secured to the front of Rayrad with the $\frac{3}{16}$ in. countersunk screws provided.

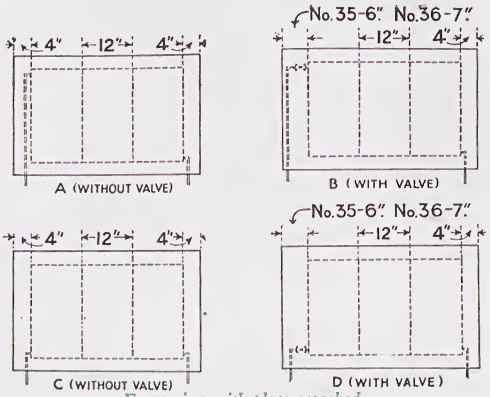
In order to minimize the transmission of heat from the back, particularly in the instance of outside walls, a $\frac{1}{2}$ in. fibre insulating board should be fitted on the wall or in the recess behind the Rayrad. A more effective insulation can be secured by attaching a sheet of aluminium foil to the face of the insulating board.

Price of rag bolts, **11d.** *each.*



The above diagram shows the position of bolts recommended (looking at front) especially for ceiling fixing.

IDEAL RAYRAD Nos. 35, 36 & 36A



Front view with plate attached.

FACE DIMENSIONS

Unless otherwise ordered, the plate will overlap the radiator 3 in. at top and bottom.

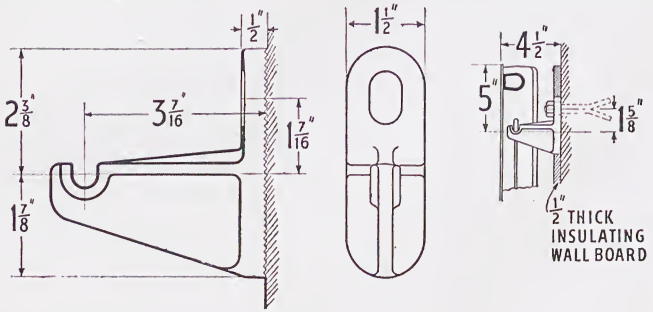
Indicate position of connections by quoting above reference letters. When connections are required to be handed the reverse of above, add letter R to reference; thus, AR will indicate top right-hand supply and bottom left-hand return without concealed valve; BR, ditto, with valve; DR, bottom opposite end connections with valve at right-hand side.

Diagonal connections are recommended for ceiling or floor fixing. Top and bottom same end connections should be avoided.

The use of a street elbow in either radiator tapping or valve as shown will readily provide back or other angle connections.

No. 13A Concealed Valve is suitable for fixing at either corner, top or bottom. For particulars, see page 186.

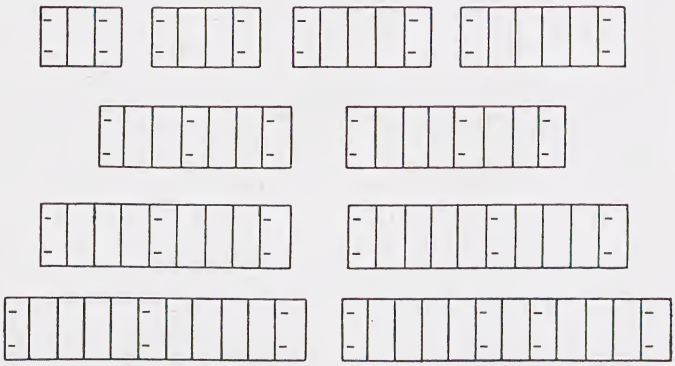
IDEAL RAYRAD No. 44



ADJUSTABLE BRACKETS

The brackets give a projection of $4\frac{1}{2}$ in. from finished wall surface to front of Rayrad. Maximum vertical adjustment $\frac{3}{8}$ in.

Price, including rag bolt, **3/4** *each.*

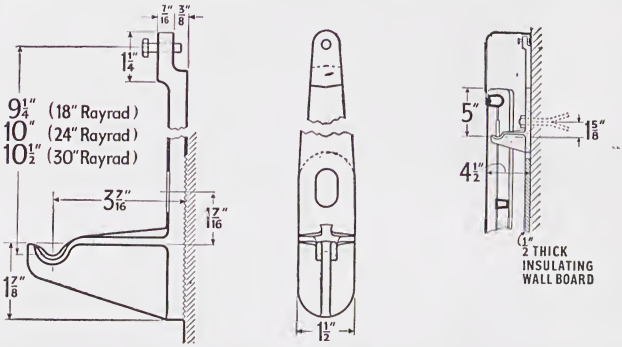


Diagrams showing arrangement of bracket fixings.

Supporting webs are cast between two vertical waterways of each section. Adjustable top brackets, secured to the wall by rag bolts engage the webs and support the Rayrad. Similar brackets for bottom fixing can be supplied to order.

It is recommended that the insulating wall board be slotted to accommodate the back plate of the bracket.

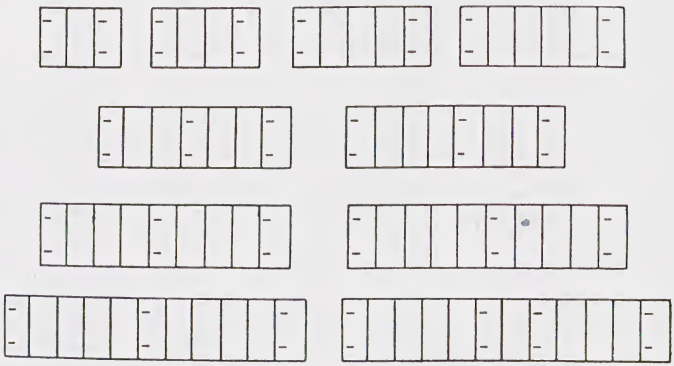
IDEAL RAYRAD No. 45



ADJUSTABLE TOP BRACKETS

The brackets give a projection of $4\frac{1}{2}$ in. from finished wall surface to front of Rayrad. Maximum vertical adjustment $\frac{3}{8}$ in.

Price, including rag bolt and hexagon headed set screw, **4/11** *each.*



Diagrams showing arrangement of bracket fixings.

Supporting webs are cast between two vertical waterways of each section. Adjustable top brackets, secured to the wall by rag bolts, engage the webs and support the Rayrad. Brackets (see page 46) for bottom fixing can be supplied to order.

It is recommended that the insulating wall board be slotted to accommodate the back plate of the bracket.

IDEAL RAYRAD Nos. 35, 36, 36A, 44 & 45

For 100° F. temperature difference (160–60° F. water-air) when fixed as below. For other temperature differences add or deduct for each 10° F. variation.

Rayrad Nos. 35, 36, 36A One-ninth of the ratings given.

Rayrad Nos. 44, 45 One-seventh of the ratings given.

IN B.T.U. per SECTION PER HOUR

TYPE	Height of section in inches	Height of plate in inches	*WALL		CEILING		FLOOR	
			Actual	Heating Effect	Actual	Heating Effect	Actual	Heating Effect
No. 35 36 & 36A	12	†13	†255	†340	†190	†285	†265	†330
	12	18	315	420	240	360	335	420
	18	24	425	565	320	480	450	565
	24	30	535	715	400	600	565	710
	30	36	645	860	480	720	680	850
No. 44 & 45	18	‡22⅞	540	650	—	—	—	—
	24	‡29⅝	735	880	—	—	—	—
	30	‡36⅛	930	1,115	—	—	—	—

* Also applies with face inclined at an angle of 45° or more from horizontal.

† No. 35 Rayrad only.

‡ No. 45 Rayrad only, the No. 44 plate size is same as for section.

ADJUSTMENTS

To Heating Effect Ratings, except where stated.

Nos. 35, 36 and 36A Wall Position.
Deduct 2 per cent. for each foot mean height of *Rayrad* above 5 ft.

Deduct 1 per cent. for each foot beyond 12½ ft. distance between *Rayrad* fixed on one wall only and opposite wall. Deduct 1 per cent. for each foot beyond 25 ft. distance between *Rayrads* fixed on opposite walls.

Ceiling Position. Deduct 1 per cent. for each foot height above 15 ft.

No. 35. Floor Position.
When sections are covered with 1 in. Marble or covering of equal conductivity, in good contact with surface, reduce Actual Transmission figures by 25 per cent., and then add 25 per cent. to obtain Heating Effect figures.

Connections. Diagonal flow and return connections are recommended for all positions and are essential when the radiators are to be fixed on ceiling or floor. Top and bottom same end connections should be avoided.

To Ascertain Sections Required. Calculate the heat losses of room or building in the usual manner and divide the total or totals by the Heating Effect Transmission figures given, subject of course to the appropriate corrections. The answer will be the number of sections needed. The Actual Transmission figures should be used for pipe sizing and boiler power. If a given air temperature has to be guaranteed, the Actual Transmission figures should be taken as the divisor for determining the sections required, but for conditions of comfort the smaller number of sections will suffice.

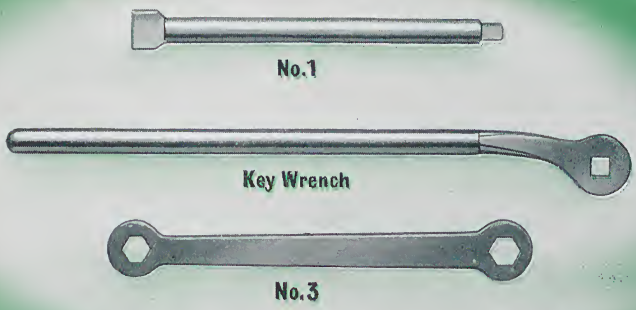
INSULATION

It is advisable to insulate *Rayrad* when applied in any position, but this is essential when fitted to outside wall or ceiling. The figures on page 48 are the transmissions per section when insulated as follows:

Nos. 35, 36 and 36A Wall, Ceiling and Floor.
Fixed tight to ½ in. fibre insulating board and sealed all round edge of plate.

Nos. 44 and 45 Wall.
Facing back of radiator with ½ in. fibre insulating board.

It is recommended in each case that the insulating board be faced with aluminium foil.



RADIATOR WRENCHES

No. 1 Radiator Nipple Wrenches	LENGTH IN INCHES						
	6	12	14	18	19	24	36
¾ in. for Nos. 35, 36 & 36A Rayrad	—	—	10/8	—	—	—	—
1 in. for Nos. 44 & 45 Rayrad	—	—	—	—	15/3	—	—
1 in. for Neo-Classic No. 2, Nos. 4 and 6 (18 & 24 in.) and Neo-Hospital (3 in.)	12/6	13/9	—	15/3	—	16/9	—
1 in. for Classic Wall	—	—	—	—	15/3	—	—
1¼ in. for Neo-Classic Nos. 4 & 6 (30 & 36 in.), Neo-Hospital (5¾ and 7¼ in.) and Neo-Classic Window	13/9	17/1	—	23/5	—	28/4	34/8
1½ in. for Plain Wall and Plain 1 & 2 Column	9/8	10/8	—	11/11	—	12/10	15/3

Key Wrench For Neo-Classic No. 2; Nos. 4 and 6 (18 and 24 in.); Neo-Hospital 3 in. and Rayrad. PRICE **36/7** each.

Key Wrench For Neo-Classic Nos. 4 and 6 (30 and 36 in.); Neo-Hospital 5¾ and 7¼ in. PRICE **36/7** each.

No. 3 Plug Wrench For Neo-Classic No. 2; Nos. 4 and 6 (18 and 24 in.); Neo-Hospital 3 in. and Classic Wall. PRICE **24/5** each.

No. 3 Plug Wrench For Neo-Classic Nos. 4 and 6 (30 and 36 in.); Neo-Hospital 5¾ and 7¼ in. PRICE **26/9** each.

For assembling instructions, see page 9.

ENAMELS

Stocked in White and Cream.

Supplied in any other shades or colours to match decorations.

	1 gal.	½ gal.	¼ gal.	1 pt.
PRICE	65/-	33/3	17/3	8/9
Ideal Priming Paint*	60/-	31/-	16/-	8/3

* *Stocked in White and Grey; any other shade supplied.*

One gallon of Ideal Enamel or Priming Paint will cover 300 to 500 square feet, one coat, dependent upon the method of application.

BRONZES

Aluminium supplied in ¼ lb. tins, other colours in 1 lb. tins.

BRONZE POWDER		BRONZING LIQUID			
Colour	Price per lb.	No. of Tin	Price	Sufficient for	
				Aluminium	Other Colour
Copper	12/3	1	36/9	1 lb.	4 lb.
Gold	11/9	2	19/-	½ ,,	2 ,,
Aluminium	11/3	3	9/9	¼ ,,	1 ,,
Fire	13/3	4	5/-	⅛ ,,	½ ,,
Old Penny	22/3				

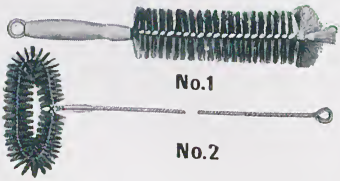
One pound of Powder (except Aluminium) mixed with the liquid will cover about 200 square feet of radiation, one coat; 1 lb. of Aluminium Powder will cover about 600 square feet of radiation.

It should be noted that the use of *any metallic* (*bronze*) paint reduces the heat emission; enamels or other paints should preferably be used.

ENAMEL BRUSH

For Ideal Enamels and Bronzes, suitable for Ideal Neo-Classic Radiators. PRICE 3/3 each.

RADIATOR BRUSHES



No. 1. Suitable for all types of Radiators except Classic Wall pattern. PRICE 4/6 each.

No. 2. For Ideal Classic Wall Radiators. PRICE 7/6 each.

Electric Model,
Shown fitted with protective Fireguard

IDEAL FIRERAD

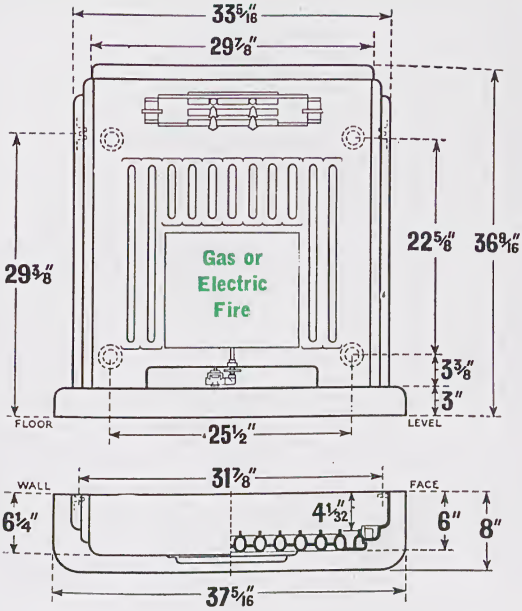
The Ideal Firerad, which resembles an attractive fireplace, is designed for installation in the smaller type of house and is suitable for rooms of approximately 1,500 cu. ft. It combines in one appliance a hot water radiator with an electric or flueless gas fire.

Gas Model,
Shown fitted with protective Fireguard

The hot water radiator (rated at 2,500 B.T.U. per hour) provides the continuous "background" warmth, whilst the electric or gas fire is available for "topping-up" when required.

Standard Finish, stove enamelled in neutral colour shade. Fixed in position with two $\frac{3}{8}$ in. rag bolts*.

* *Not supplied unless specially ordered.*



Side elevation of flueless gas fire. Gas supply $\frac{1}{4}$ in.

ELECTRIC MODEL

Brit. Regd. Design No. 841,418
Brit. Patent No. 574,433

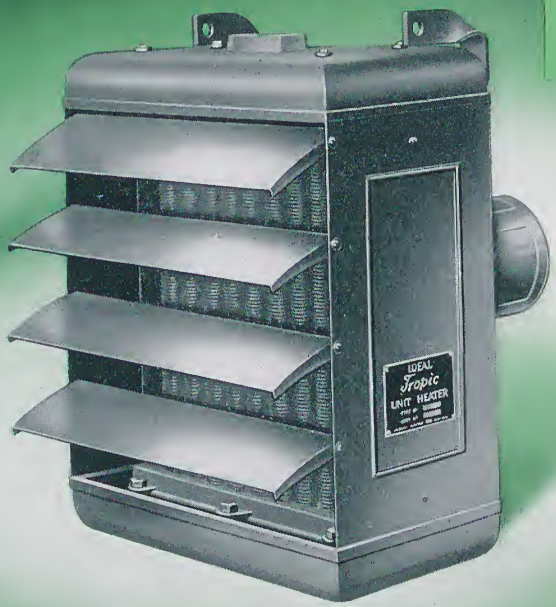
This can be either 1 or 2 kW. output, each unit being on a separate switch. The voltage of the current available must be stated on order.

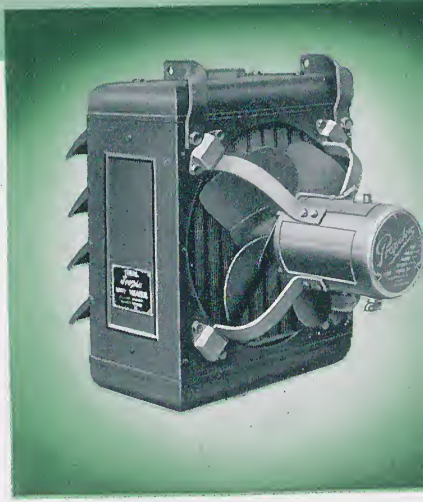
GAS MODEL

Brit. Regd. Design No. 841,418
Brit. Patent No. 574,433

Fitted with a flueless gas fire which consumes 10 cu. ft. of gas per hour.

Flow and return tappings, 1 inch.



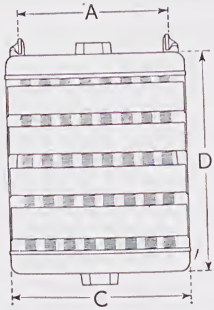


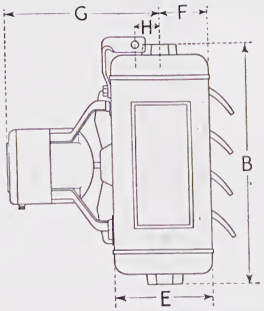
The illustrations show the front and rear view of the Ideal Tropic Unit Heater. Comprehensive tables of outputs with standard motors are given on pages 57 to 66 to enable the Heating Engineer to select a size of unit heater best suited to the installation.

For details of D.A. Inverted Bucket Steam Trap and Push-Button operated starters, see page 67.

IDEAL TROPIC UNIT HEATER

For Accelerated Water or Steam





UNIT No.	Air Outlet Area Sq. ft.	DIMENSIONS IN INCHES									Net Weight lb.
		A	B	C	D	E	F	G 1-ph	G 3-ph	H	
S118, S119, S129 W & S139	1·4	12¼	19¼	14½	18 1/16	8	4	14	12 5/16	1⅞	67 71 76
S218, S219, S229 W & S239	2·4	15½	24⅛	18 9/16	22 15/16	8¾	4	14 5/16	13¼	2⅝	99 108 116
S319 S329, S338 W & S339	3·4	16¼	27⅞	21 13/16	26 11/16	9 5/16	4	17 11/16	15 5/16	3 3/16	135 146 158
S447, S448, W & S449	4·2	22	28¾	26⅜	27 9/16	11	4 13/32	18 31/32	16 1/32	1⅞	185

UNIT No.	* CONNECTIONS			Fan Size	APPROXIMATE WATTAGE					
	Water	Steam Inlet	Steam Outlet		1,400 R.P.M. A.C. 1-ph	1,400 R.P.M. A.C. 3-ph	900 R.P.M. A.C. 1-ph	900 R.P.M. A.C. 3-ph	1,400 R.P.M. D.C.	900 R.P.M D.C.
S118, S119, S129 W & S139	— 1¼″	1″	¾″	12″	90	75	58	53	80	55
S218, S219, S229 W & S239	— 1¼″	1″	¾″	15″	170	170	92	94	200	98
S319 S329, S338 W & S339	— 1½″	1¼″	1″	16″	240	300	115	156	240	110
S447, S448, W & S449	— 2″	1½″	1¼″	17″	300	300	127	156	280	160

* *Heaters for water are tapped as above. Steam Units have tappings bushed as shown, unless otherwise specified.*

IDEAL TROPIC UNIT HEATERS

The range of unit heaters listed is based on four casing sizes, each being fitted with a number of heating elements to give a varying range of outputs and air temperature rises. The units are suitable for accelerated water or steam and the heating elements are all tested to 200 lb. sq. in. for use with steam up to 50 lb. pressure, and to 400 lb. when ordered for use with steam from 50 to 100 lb. pressure.

The elements comprise gilled copper tubes expanded into cast-iron headers. The gills are formed by a continuous strip of copper or aluminium, mechanically bonded to each tube throughout its length, ensuring perfect metallic contact without the use of soldered or brazed joints. The gills are flat and present the minimum resistance to airflow and reduce the possibility of dirt collecting on the heating surface. Heat-resisting rubber bushes support the heating element in the casing, accurate location being ensured by bolt ends projecting from the headers into the bushes. This method of support allows the heating element to expand freely and at the same time prevents any rattle occurring between the element and the casing.

The fan unit is specially designed, the blades being of rigid construction, and the motors comply with the requirements of B.S.S. 170/1939. The fan blades and motors are carefully balanced to prevent vibration. The four arms supporting the motor are anchored in rubber mountings. A.C. motors of approximately 1,400 r.p.m. are supplied as standard, but capacities are also given for accelerated water with motor speed of 900 r.p.m. Capacities for steam with motor speed of 900 r.p.m. on application. D.C. motors can be provided if required. Particulars of the electric supply must be given on the order.

The louvres are individually adjustable, and special suspension brackets relieve the joints of the casing from unnecessary loading. Provision for air duct connections can be made to special order.

Ideal Tropic Unit Heaters for steam may be installed on two-pipe gravity systems or on vacuum pump systems. Care must be taken in arranging the piping to provide suitable drip connections so that the condensate from mains, etc., does not pass through the unit. Steam traps should be of ample size to handle the extra condensate formed during heating-up periods when entering air temperatures are low and the unit working at a higher output than normally.

Comprehensive tables of outputs with standard motors are given on the following pages to enable the Heating Engineer to select a size of unit heater best suited to the installation.

IDEAL TROPIC UNIT HEATERS

Capacities for accelerated water. Approximate motor speed 900 R.P.M.

Unit No. and Air Volume	Mean Water Temp. °F.	Output B.T.U. per hour						Final Air Temperature °F.						Water Resistance inches W.G. (Approx.)
		Entering Air Temperature °F.						Entering Air Temperature °F.						
		30	40	50	55	60	65	30	40	50	55	60	65	
No. W139 480 C.F.M. Approx.	150	23,800	21,900	19,850	18,850	17,850	16,900	75	82	88	91	94	97	·8
	160	25,800	23,800	21,900	20,900	19,850	18,850	79	85	92	95	98	101	·9
	170	27,800	25,800	23,800	22,800	21,900	20,900	83	89	95	99	102	105	1·0
	180	29,900	27,800	25,800	24,800	23,800	22,800	87	93	99	102	105	108	1·1
No. W239 835 C.F.M. Approx.	150	48,000	43,900	40,000	38,000	35,800	34,000	83	88	94	96	99	102	1·9
	160	51,900	48,000	43,900	41,900	40,000	38,000	87	93	98	101	104	106	2·2
	170	55,900	51,900	48,000	45,900	43,900	41,900	91	97	103	105	108	111	2·4
	180	60,000	55,900	51,900	50,000	48,000	45,900	96	101	107	110	113	115	2·7
No. W339 ,160 C.F.M. Approx.	150	65,600	60,100	54,700	52,000	49,200	46,500	82	87	93	96	99	102	2·2
	160	71,100	65,600	60,100	57,500	54,700	52,000	86	92	97	100	103	106	3·0
	170	76,600	71,100	65,600	62,900	60,100	57,500	90	97	102	105	107	110	3·3
	180	82,100	76,600	71,100	68,400	65,600	62,900	94	100	107	109	112	115	3·8
No. W449 ,490 C.F.M. Approx.	150	89,500	82,000	75,000	71,000	67,500	63,700	85	90	96	99	101	104	3·9
	160	97,000	89,500	82,000	78,500	75,000	71,000	89	95	100	103	106	109	5·3
	170	104,500	97,000	89,500	86,000	82,000	78,500	94	99	105	108	110	113	5·8
	180	112,000	104,500	97,000	93,500	89,500	86,000	99	104	109	112	115	118	6·7

Output based on a drop of 15° F. in water temperature through heaters.

IDEAL TROPIC UNIT HEATERS

Capacities for accelerated water. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Mean Water Temp. °F.	Output B.T.U. per hour — Entering Air Temperature °F.					Final Air Temperature °F. — Entering Air Temperature °F.					Water Resistance inches W.G (Approx.)
		30	40	50	55	60	30	40	50	55	60	
No. W139 720 C.F.M. Approx.	150	33,100	30,400	27,600	26,200	24,800	72	78	85	88	91	1·3
	160	35,900	33,100	30,400	29,000	27,600	75	82	88	92	95	1·5
	170	38,600	35,900	33,100	31,800	30,400	79	85	92	95	98	1·6
	180	41,500	38,600	35,900	34,500	33,100	83	89	95	99	102	1·8
No. W239 1,300 C.F.M. Approx.	150	66,600	61,000	55,500	52,500	49,700	77	83	89	92	95	3·0
	160	72,100	66,600	61,000	58,200	55,500	81	87	93	96	99	3·4
	170	77,700	72,100	66,600	63,800	61,000	84	91	97	100	103	3·9
	180	83,300	77,700	72,100	69,400	66,600	88	94	101	104	107	4·4
No. W339 1,800 C.F.M. Approx.	150	91,200	83,600	76,000	72,200	68,400	76	82	89	92	95	4·5
	160	98,800	91,200	83,600	79,800	76,000	80	86	92	96	99	5·2
	170	106,400	98,800	91,200	87,400	83,600	84	90	96	99	102	6·3
	180	114,000	106,400	98,800	95,000	91,200	88	94	100	103	106	7·5
No. W449 2,320 C.F.M. Approx.	150	124,500	114,000	104,000	98,500	93,500	79	85	91	94	97	7·9
	160	135,000	124,500	114,000	109,000	104,000	83	89	95	98	101	9·1
	170	145,500	135,000	124,500	119,500	114,000	87	93	99	102	105	11·1
	180	156,000	145,500	135,000	130,000	124,500	91	97	103	106	109	13·2

Output based on a drop of 15° F. in water temperature through heaters.

IDEAL TROPIC UNIT HEATERS

Capacities for steam. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Steam Pressure at Heater lb./sq. in. Gauge	Output B.T.U. per hour — Entering Air Temperature °F.					Final Air Temperature °F. — Entering Air Temperature °F.					Condensate lb. per hour — Entering Air Temperature °F				
		30	40	50	55	60	30	40	50	55	60	30	40	50	55	60
No. S118 860 C.F.M. Approx.	2	38,600	36,500	34,500	33,500	32,500	71	78	86	90	94	40	38	36	35	34
	5	40,300	38,200	36,200	35,200	34,200	72	80	88	92	96	42	40	38	37	36
	10	42,800	40,700	38,700	37,700	36,700	75	83	91	95	99	45	43	41	40	38
	15	44,800	42,800	40,800	39,800	38,800	77	85	93	97	101	47	45	43	42	41
	20	46,600	44,600	42,600	41,600	40,600	79	87	95	99	103	50	48	45	44	43
	30	49,700	47,700	45,700	44,700	43,700	83	91	98	102	106	54	52	49	48	47
	40	52,400	50,400	48,300	47,300	46,300	86	93	101	105	109	57	55	53	52	51
	50	54,600	52,500	50,500	49,500	48,500	88	95	103	107	111	60	58	55	54	53
	60	56,500	54,400	52,400	51,400	50,400	90	97	105	109	113	63	61	58	57	56
	70	58,300	56,200	54,200	53,200	52,200	92	100	107	111	115	65	63	61	60	59
	80	60,000	57,900	55,900	54,900	53,900	94	101	109	113	117	67	65	63	61	60
	90	61,400	59,300	57,300	56,300	55,300	95	103	111	115	119	70	67	65	64	63
	100	62,800	60,700	58,700	57,700	56,700	97	104	112	116	120	72	69	67	66	65
No. S119 840 C.F.M. Approx.	2	44,000	41,600	39,300	38,200	37,000	78	85	93	96	100	46	43	41	40	38
	5	46,000	43,600	41,300	40,200	39,000	80	87	95	99	102	48	45	43	42	41
	10	48,800	46,500	44,100	43,000	41,800	83	90	98	102	105	51	49	46	45	44
	15	51,100	48,800	46,500	45,300	44,200	85	93	100	104	108	54	52	49	48	47
	20	53,200	50,900	48,600	47,400	46,200	88	95	103	106	110	57	55	52	51	50
	30	56,600	54,300	52,000	50,900	49,600	92	99	106	110	114	61	59	56	55	54
	40	59,700	57,400	55,100	54,000	52,700	95	103	110	114	117	65	62	60	58	57
	50	62,200	59,900	57,600	56,400	55,300	97	105	112	116	120	68	66	63	62	61
	60	64,400	62,000	59,700	58,500	57,400	100	107	115	119	122	71	69	66	65	64
	70	66,500	64,100	61,800	60,600	59,500	102	110	117	121	125	75	72	69	68	67
	80	68,300	66,000	63,600	62,500	61,300	104	112	119	123	127	77	74	72	71	69
	90	69,900	67,600	65,200	64,100	63,000	106	113	121	125	128	79	77	74	73	72
	100	71,500	69,200	66,900	65,700	64,600	108	115	123	126	130	82	79	76	75	74

Also available with 900 R.P.M. motors—capacities on application.

IDEAL TROPIC UNIT HEATERS

Capacities for steam. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Steam Pressure at Heater lb./sq. in. Gauge	Output B.T.U. per hour — Entering Air Temperature °F.					Final Air Temperature °F. — Entering Air Temperature °F.					Condensate lb. per hour — Entering Air Temperature °F.				
		30	40	50	55	60	30	40	50	55	60	30	40	50	55	60
No. S129 780 C.F.M. Approx.	2	50,100	47,400	44,800	43,400	42,100	89	96	102	106	109	52	49	46	45	44
	5	52,300	49,700	47,000	45,700	44,400	91	98	105	109	112	55	52	49	48	46
	10	55,500	52,900	50,200	48,900	47,600	95	102	109	112	116	58	56	53	51	50
	15	58,200	55,600	52,900	51,600	50,300	98	105	112	116	119	62	59	56	55	53
	20	60,600	58,000	55,400	54,000	52,700	101	108	115	118	121	65	62	59	58	57
	30	64,600	62,000	59,400	58,000	56,700	106	113	120	123	126	70	67	64	63	62
	40	68,100	65,400	62,800	61,400	60,100	110	117	124	127	130	75	72	69	67	66
	50	70,900	68,200	65,600	64,200	62,900	113	120	127	130	134	78	75	72	71	69
	60	73,400	70,700	68,100	66,700	65,400	116	123	130	133	137	82	79	76	74	73
	70	75,800	73,100	70,500	69,100	67,800	118	125	132	136	139	85	83	79	77	76
	80	77,900	75,200	72,600	71,200	69,900	121	128	135	138	142	88	85	82	80	79
	90	79,800	77,100	74,500	73,100	71,800	123	130	137	140	144	90	87	85	83	82
	100	81,600	78,900	76,300	74,900	73,600	125	132	139	142	146	93	90	87	86	84
No. S139 720 C.F.M. Approx.	2	61,400	58,200	55,000	53,300	51,700	107	113	119	122	125	64	60	57	55	54
	5	64,200	61,000	57,700	56,100	54,500	111	117	123	126	129	67	64	60	59	57
	10	68,200	64,900	61,700	60,000	58,400	116	122	128	131	134	72	68	65	63	61
	15	71,500	68,200	65,000	63,400	61,700	120	126	132	135	138	76	72	69	67	65
	20	74,400	71,100	67,900	66,200	64,600	124	130	136	139	142	80	76	73	71	69
	30	79,300	76,000	72,800	71,100	69,500	130	136	142	145	148	86	82	79	77	75
	40	83,500	80,200	77,000	75,300	73,700	136	141	147	150	153	90	87	83	82	80
	50	87,000	83,700	80,500	78,800	77,200	140	146	152	154	157	95	92	88	87	85
	60	89,900	86,600	83,400	81,700	80,100	144	150	156	158	161	100	96	93	91	89
	70	92,900	89,600	86,400	84,700	83,100	147	153	159	162	165	104	100	97	95	93
	80	95,500	92,200	89,000	87,300	85,700	151	157	163	165	168	107	104	100	99	97
	90	97,700	94,500	91,300	89,600	88,000	153	159	165	168	171	111	107	103	102	100
	100	100,000	96,800	93,500	91,900	90,300	156	162	168	171	174	114	110	107	105	103

Also available with 900 R.P.M. motors—capacities on application.

IDEAL TROPIC UNIT HEATERS

Capacities for steam. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Steam Pressure at Heater lb./sq. in. Gauge	Output B.T.U. per hour — Entering Air Temperature °F.					Final Air Temperature °F. — Entering Air Temperature °F.					Condensate lb. per hour — Entering Air Temperature °F.				
		30	40	50	55	60	30	40	50	55	60	30	40	50	55	60
No. S218 1,450 C.F.M. Approx.	2	67,100	63,500	60,000	58,200	56,500	72	80	88	91	95	70	66	62	60	59
	5	70,100	66,600	63,000	61,300	59,500	74	82	90	93	97	73	69	66	64	62
	10	74,400	70,900	67,300	65,600	63,800	77	84	92	96	100	78	74	71	69	67
	15	78,000	74,500	70,900	69,200	67,400	79	87	94	98	102	83	79	75	73	71
	20	81,100	77,600	74,000	72,200	70,500	81	89	96	100	104	87	83	79	77	75
	30	86,500	83,000	79,400	77,600	75,900	84	92	100	104	108	94	90	86	84	82
	40	91,000	87,500	83,900	82,100	80,400	87	95	103	107	111	98	95	91	89	87
	50	94,900	91,400	87,800	86,100	84,400	89	97	105	109	113	104	100	96	95	93
	60	98,100	94,600	91,000	89,300	87,600	92	100	107	111	115	109	105	101	99	97
	70	101,300	97,800	94,300	92,500	90,800	94	102	109	113	117	113	109	105	103	101
	80	104,000	100,500	97,000	95,300	93,500	95	103	111	115	119	117	113	110	107	105
	90	106,500	103,000	99,500	97,800	96,000	97	105	113	116	120	120	116	113	111	109
	100	109,000	105,500	102,000	100,300	98,500	99	107	114	118	122	124	120	116	114	112
No. S219 1,450 C.F.M. Approx.	2	76,100	72,100	68,100	66,100	64,000	78	85	93	97	100	79	75	71	68	66
	5	79,600	75,500	71,500	69,500	67,500	80	87	95	99	102	83	79	75	72	70
	10	84,400	80,400	76,400	74,400	72,400	83	91	98	102	105	89	85	80	78	76
	15	88,500	84,500	80,500	78,500	76,500	86	93	101	104	108	94	89	85	83	81
	20	92,100	88,100	84,100	82,100	80,000	88	95	103	106	110	99	94	90	88	86
	30	98,100	94,100	90,100	88,100	86,000	92	99	107	110	114	106	102	97	95	93
	40	103,400	99,400	95,400	93,300	91,300	95	102	110	114	117	113	109	104	102	100
	50	107,700	103,700	99,600	97,600	95,600	98	105	113	116	120	118	114	109	107	105
	60	111,300	107,300	103,200	101,200	99,200	00	108	115	119	122	123	119	115	112	110
	70	115,000	111,000	107,000	105,000	103,000	102	110	117	121	125	128	124	119	117	115
	80	118,100	114,100	110,100	108,100	106,100	104	112	119	123	127	133	128	124	122	119
	90	121,000	117,000	113,000	111,000	109,000	106	114	121	125	129	137	132	128	126	123
	100	123,900	119,900	115,900	113,900	111,900	108	115	123	126	130	141	136	132	130	127

Also available with 900 R.P.M. motors—capacities on application.

IDEAL TROPIC UNIT HEATERS

Capacities for steam. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Steam Pressure at Heater lb./sq. in. Gauge	Output B.T.U. per hour — Entering Air Temperature °F.					Final Air Temperature °F. — Entering Air Temperature °F.					Condensate lb. per hour — Entering Air Temperature °F.				
		30	40	50	55	60	30	40	50	55	60	30	40	50	55	60
No. S229 1,400 C.F.M. Approx.	2	87,900	83,300	78,700	76,300	74,000	88	94	101	105	108	91	86	82	79	77
	5	91,900	87,300	82,600	80,300	78,000	90	97	104	108	111	96	91	86	84	81
	10	97,500	92,900	88,300	85,900	83,600	94	101	108	111	115	103	98	93	90	88
	15	103,200	97,600	93,000	90,700	88,400	97	104	111	114	118	108	103	98	96	94
	20	106,400	101,800	97,200	94,900	92,600	99	106	113	117	120	114	109	104	101	99
	30	113,400	108,800	104,100	101,800	99,500	104	111	118	121	125	122	117	112	110	106
	40	119,400	114,800	110,100	107,800	105,500	108	115	122	125	129	130	125	120	118	115
	50	124,400	119,800	115,100	112,800	110,500	111	118	125	128	132	137	132	127	124	122
	60	128,700	124,100	119,400	117,100	114,800	114	121	128	131	135	143	138	133	130	127
	70	132,800	128,100	123,400	121,100	118,800	116	123	130	134	138	149	143	138	136	133
	80	136,500	131,900	127,200	124,900	122,600	119	126	133	136	140	154	148	143	141	138
	90	139,600	135,000	130,300	128,000	125,700	121	128	135	138	142	158	153	148	145	143
	100	143,000	138,400	133,700	131,400	129,100	123	130	137	140	144	163	158	152	150	147
No. S239 1,300 C.F.M. Approx.	2	104,300	98,800	93,300	90,500	87,800	103	109	115	118	121	108	102	97	94	91
	5	109,000	103,500	98,000	95,300	92,500	106	113	119	122	125	114	108	102	99	96
	10	115,700	110,200	104,700	101,900	99,200	111	117	123	126	129	122	116	110	107	104
	15	121,300	115,800	110,300	107,500	104,800	115	121	127	130	133	128	123	117	114	111
	20	126,300	120,800	115,200	112,400	109,800	119	125	131	134	137	135	129	123	120	117
	30	134,600	129,000	123,400	120,800	118,000	124	130	136	140	143	145	139	133	130	127
	40	141,800	136,200	130,700	128,000	125,200	129	135	142	145	148	154	148	142	139	136
	50	147,600	142,000	136,500	133,800	131,000	133	139	146	149	152	162	156	150	147	144
	60	152,300	147,000	141,400	138,700	136,000	137	143	149	152	155	168	163	157	153	151
	70	157,200	151,900	146,300	143,600	140,900	140	146	153	156	159	176	170	164	161	158
	80	161,900	156,000	150,900	148,000	145,100	143	149	156	159	162	182	176	170	167	164
	90	165,700	160,100	154,600	153,000	149,100	146	152	159	162	165	188	182	175	172	169
	100	169,300	164,000	158,400	155,800	153,000	149	155	161	164	167	193	187	181	177	174

Also available with 900 R.P.M. motors—capacities on application.

IDEAL TROPIC UNIT HEATERS

Capacities for steam. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Steam Pressure at Heater lb./sq. in. Gauge	Output B.T.U. per hour — Entering Air Temperature °F.					Final Air Temperature °F. — Entering Air Temperature °F.					Condensate lb. per hour — Entering Air Temperature °F.				
		30	40	50	55	60	30	40	50	55	60	30	40	50	55	60
No. S319 1,860 C.F.M. Approx.	2	102,000	96,500	91,500	88,500	86,000	80	87	95	98	102	106	100	95	92	89
	5	106,500	101,500	96,000	93,000	90,500	82	90	97	101	104	111	106	100	97	94
	10	113,000	108,000	102,500	99,500	97,000	85	93	100	104	108	119	113	108	105	102
	15	118,500	113,500	108,000	105,000	102,500	88	96	103	107	110	126	120	114	111	109
	20	123,500	118,000	113,000	110,000	107,500	91	98	105	109	113	131	126	121	117	115
	30	131,500	126,000	121,000	118,000	115,000	95	102	109	113	117	142	136	131	127	124
	40	138,500	133,000	128,000	125,000	122,500	98	105	113	116	120	151	145	140	136	134
	50	144,500	139,000	133,500	131,000	128,000	101	108	115	119	123	159	153	147	144	141
	60	149,500	144,000	138,500	136,000	133,000	103	110	118	121	125	166	160	153	151	147
	70	154,000	149,000	143,500	141,000	138,000	106	113	120	124	128	172	166	160	157	154
	80	158,500	153,000	148,000	145,000	142,000	108	115	122	126	130	178	172	166	163	160
	90	162,500	157,000	151,500	149,000	146,000	110	117	124	128	132	184	178	171	168	165
	100	166,000	161,000	155,000	152,500	150,000	112	119	126	130	134	189	183	176	173	171
No. S329 1,800 C.F.M. Approx.	2	115,500	109,500	103,500	100,500	97,500	89	96	102	106	109	120	113	107	104	101
	5	121,000	114,500	108,500	105,500	102,500	91	98	105	109	112	126	120	113	110	107
	10	128,000	122,000	116,000	113,000	110,000	95	102	109	112	116	135	128	122	119	115
	15	134,500	128,500	122,000	119,000	116,000	98	105	112	116	119	142	136	129	126	123
	20	140,000	134,000	128,000	125,000	122,000	100	108	115	119	122	149	143	137	133	130
	30	149,000	143,000	137,000	134,000	131,000	105	112	119	123	126	161	154	148	145	141
	40	157,000	151,000	145,000	142,000	139,000	110	117	124	127	131	171	165	158	155	152
	50	163,500	157,500	151,500	148,500	145,000	113	120	127	130	134	180	173	166	163	159
	60	169,500	163,500	157,000	154,000	151,000	116	123	130	133	137	188	181	174	171	167
	70	175,000	169,000	163,000	160,000	157,000	119	126	133	136	140	195	189	182	179	175
	80	180,000	174,000	167,500	164,500	161,500	121	128	135	138	142	202	195	188	185	181
	90	184,000	178,000	172,000	169,000	166,000	123	130	137	141	144	208	201	194	191	188
	100	187,500	182,500	176,000	173,000	170,000	125	132	139	143	146	213	207	200	197	193

Also available with 900 R.P.M. motors—capacities on application.

IDEAL TROPIC UNIT HEATERS

Capacities for Steam. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Steam Pressure at Heater lb./sq. in. Gauge	Output B.T.U. per hour — Entering Air Temperature °F.					Final Air Temperature °F. — Entering Air Temperature °F.					Condensate lb. per hour — Entering Air Temperature °F.				
		30	40	50	55	60	30	40	50	55	60	30	40	50	55	60
No. S338 1,800 C.F.M. Approx.	2	131,000	124,000	117,000	113,500	110,000	96	103	109	113	116	136	129	121	118	114
	5	137,000	130,000	123,000	119,500	116,000	99	106	112	116	119	143	136	128	125	121
	10	145,000	138,500	131,500	128,000	124,500	103	110	116	120	123	153	146	138	135	131
	15	152,000	145,000	138,500	135,000	131,500	107	114	120	123	126	161	154	147	143	139
	20	158,500	151,500	144,500	141,000	137,500	110	117	123	126	129	169	162	154	150	147
	30	169,000	162,000	155,000	151,500	148,000	116	122	129	132	135	182	175	167	163	160
	40	178,000	171,000	164,000	160,500	157,000	120	126	133	136	139	194	186	179	175	171
	50	185,500	178,500	171,500	168,000	164,500	124	130	137	140	143	204	196	189	185	181
	60	191,500	185,000	178,000	174,000	171,000	127	134	140	143	146	212	205	198	193	190
	70	198,000	191,000	184,000	180,500	177,000	130	137	143	146	149	221	213	205	201	197
	80	203,500	196,500	189,500	186,000	182,000	133	140	146	149	152	228	221	213	209	204
	90	208,000	201,000	194,500	191,000	187,500	135	142	149	152	155	235	227	220	216	211
	100	213,000	206,000	199,000	196,000	192,000	138	144	151	154	157	242	234	226	223	218
No. S339 1,800 C.F.M. Approx.	2	156,500	148,500	140,000	136,000	132,000	109	115	121	124	127	162	154	145	141	137
	5	164,000	155,500	147,500	143,000	139,000	113	119	125	128	131	171	162	153	149	145
	10	174,000	165,500	157,500	153,000	149,000	118	124	130	133	136	183	174	165	161	157
	15	182,500	174,000	165,500	161,500	157,500	123	128	134	137	140	193	184	175	171	167
	20	190,000	181,500	173,000	169,000	165,000	126	132	138	141	144	203	194	185	180	176
	30	202,000	194,000	186,000	181,500	177,500	132	138	144	147	150	218	209	201	196	191
	40	212,500	204,500	196,000	192,000	188,000	138	144	150	153	156	232	223	214	209	205
	50	222,000	213,500	205,000	201,000	197,000	142	148	154	157	160	244	235	225	221	216
	60	229,500	221,000	212,500	208,500	204,500	146	152	158	161	164	254	245	235	232	227
	70	237,000	229,000	220,500	216,500	212,000	150	156	162	165	168	264	255	246	242	237
	80	244,000	235,500	227,000	223,000	219,000	154	159	165	168	171	274	265	255	250	246
	90	250,000	241,500	233,000	228,500	225,000	156	162	168	171	174	282	273	263	258	254
	100	255,500	247,000	239,000	234,500	230,500	159	165	171	174	177	290	281	272	267	262

Also available with 900 R.P.M. motors—capacities on application.

IDEAL TROPIC UNIT HEATERS

Capacities for steam. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Steam Pressure at Heater lb./sq. in. Gauge	Output B.T.U. per hour — Entering Air Temperature °F.					Final Air Temperature °F. — Entering Air Temperature °F.					Condensate lb. per hour — Entering Air Temperature °F.				
		30	40	50	55	60	30	40	50	55	60	30	40	50	55	60
No. S447 2,580 C.F.M. Approx.	2	159,000	150,500	142,000	138,000	134,000	86	93	100	104	107	165	156	147	143	139
	5	167,000	158,000	149,500	145,500	141,500	89	96	103	107	110	174	165	156	153	148
	10	177,000	168,500	160,000	156,000	152,000	93	100	107	110	114	186	177	168	164	160
	15	185,500	177,000	168,500	164,000	160,000	96	103	110	113	117	196	187	179	174	169
	20	193,500	184,000	176,000	172,000	168,000	98	105	112	116	119	206	196	188	183	179
	30	206,000	197,000	188,500	184,000	180,000	103	110	117	120	124	222	212	203	198	194
	40	217,000	208,000	199,500	196,000	191,500	107	114	121	124	128	236	227	217	213	209
	50	226,000	217,000	209,000	204,500	200,500	110	117	124	127	131	248	239	230	225	220
	60	234,000	225,000	217,000	212,000	208,000	113	120	127	130	133	259	249	240	235	230
	70	241,000	232,500	225,000	220,500	217,000	115	122	129	133	136	269	259	251	246	242
	80	248,000	239,000	230,500	226,500	222,000	118	125	131	135	138	278	268	259	254	249
	90	254,000	245,000	236,500	232,000	228,000	120	127	134	137	140	285	277	268	262	258
	100	259,500	251,000	242,500	238,500	234,000	122	129	136	139	143	295	285	276	271	266
No. S448 2,420 C.F.M. Approx.	2	181,500	172,000	162,000	157,500	153,000	98	105	111	114	118	188	178	168	163	158
	5	190,000	181,000	171,000	167,000	161,500	102	108	115	118	121	199	189	178	174	168
	10	202,000	192,000	182,500	178,000	173,000	106	112	119	122	125	212	202	192	187	182
	15	212,000	202,000	192,000	187,000	182,500	110	116	122	126	129	224	214	203	198	193
	20	220,500	210,500	201,000	196,000	191,000	113	119	126	129	132	235	224	214	209	203
	30	235,000	225,000	215,000	210,500	205,500	119	125	131	134	138	253	243	232	227	222
	40	247,500	237,500	228,000	223,000	218,500	123	130	136	139	142	270	259	248	243	238
	50	258,000	248,000	238,500	233,500	228,500	127	134	140	143	146	284	273	262	257	251
	60	267,000	257,000	247,000	242,000	237,500	131	137	143	146	150	296	285	273	268	263
	70	275,000	265,000	256,500	252,000	247,500	134	140	147	150	153	307	296	285	281	276
	80	283,000	273,000	263,000	258,500	254,000	137	143	149	152	156	318	307	295	290	285
	90	289,500	280,000	270,000	265,000	261,000	139	146	152	155	158	327	316	305	300	295
	100	296,000	286,500	276,500	272,000	267,000	141	148	154	157	161	336	326	314	309	304

Also available with 900 R.P.M. motors—capacities on application.

IDEAL TROPIC UNIT HEATERS

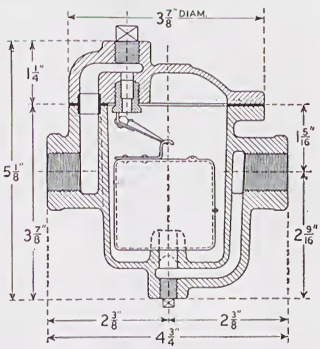
Capacities for steam. Approximate motor speed 1,400 R.P.M.

Unit No. and Air Volume	Steam Pressure at Heater lb./sq. in. Gauge	Output B.T.U. per hour					Final Air Temperature °F.					Condensate lb. per hour				
		Entering Air Temperature °F.					Entering Air Temperature °F.					Entering Air Temperature °F.				
		30	40	50	55	60	30	40	50	55	60	30	40	50	55	60
No. S449 2,320 C.F.M. Approx.	2	204,000	193,500	182,500	177,000	172,000	110	116	121	124	127	211	200	189	183	178
	5	214,000	203,000	192,000	188,000	181,500	113	119	125	128	131	223	211	200	196	189
	10	227,000	216,000	205,000	200,000	194,500	119	125	130	133	136	239	227	215	210	204
	15	238,000	227,000	216,000	210,500	205,000	123	139	134	137	140	252	240	229	223	217
	20	248,000	236,500	226,000	220,500	215,000	127	133	138	141	144	264	252	241	235	229
	30	264,000	253,000	242,000	236,500	231,000	133	139	145	148	151	284	273	261	255	249
	40	278,000	267,000	256,000	251,000	245,500	139	144	150	153	156	302	291	278	273	267
	50	290,000	278,500	268,000	262,500	257,000	143	149	155	158	161	319	306	294	286	280
	60	300,000	288,500	278,000	272,000	267,000	147	153	159	162	164	332	319	308	301	296
	70	309,000	298,000	288,500	283,000	278,000	151	157	163	166	169	345	332	322	316	310
	80	318,000	307,000	296,000	290,500	285,000	154	160	166	169	172	357	345	332	326	320
	90	325,500	314,500	303,500	298,000	293,000	157	163	169	172	175	368	356	343	337	331
	100	333,000	322,000	311,000	306,000	300,000	160	166	172	175	177	378	366	354	348	341

Also available with 900 *R.P.M. motors—capacities on application.*

DESCRIPTIVE BOOKLET SENT ON REQUEST

D.A. INVERTED BUCKET STEAM TRAP



This trap has only a few simple working parts which by removal of the cover are easily accessible for inspection. The standard body is of cast-iron, and the valve and seat of chrome steel. Sharp decisive action gives prompt full-bore discharge, and low resistance through the trap provides exceptional lifting capacity. Due to high velocity of condense discharge, dirt and grease are scoured out at every operation. Air is vented automatically. The trap is of high capacity in relation to size and weight, and is suitable for pressure ranges given below.

No. 8 For pressures 41–80 lb. per sq. in.
No. 10 „ „ 21–40 „ „ „
No. 12 „ „ 0–20 „ „ „

Connections ½ in. Weight 4½ lb. PRICE **£3 12s. 0d.** each.

Not suitable for No. 339 and 449 Tropic Unit Heaters when used with steam under 2 lb. or over 50 lb., prices for suitable trap on application.

When ordering, specify catalogue number or working steam pressure at Unit Heater.

PUSH-BUTTON OPERATED STARTERS

These Starters are particularly suitable for the control of Unit Heaters, being designed for single, two and three-phase fractional horse-power motors up to and including ½ h.p., 200/450 volts, where a "no-volt" release is unnecessary. They embody the following features:—A moulded plastic dust-protecting case for wall fixing.

A D.P. or T.P. airbreak switch without "no-volt" release for direct starting the motor.

On the single-phase model two adjustable thermal overload releases and on the three-phase model three adjustable thermal overload releases. Visual indicator to show when switch is on. A single-phasing preventer is provided on the three-phase model *only*.

PRICE **£4 2s. 9d.** each.

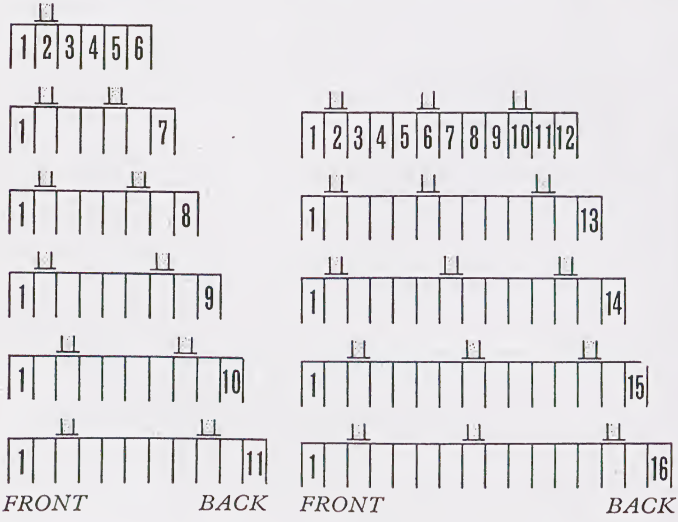
IDEAL BOILERS

RECOMMENDED FLOW CONNECTIONS FOR NOS. 2, 3, 4 & 5 BRITANNIA BOILERS (BACK HEADER RETURN CONNECTIONS)

With a view to clarifying the subject of adequate connections on the larger types of Sectional Boilers, we would point out that, although the Boiler is a negligible factor in the frictional resistance of the system, it is important to ensure proper circulation within the Boiler so as to provide an adequate flow of water over all of the heating surface.

We recommend that an open air pipe should be fitted on all Boilers, and we give hereunder a chart showing the recommended number and position of flow tappings on the Nos. 2, 3, 4 and 5 Series Britannia Boilers, when back header return connections are used.

We would further point out it is preferable that the pipe connections on any one Boiler should be of the same size, and should be capable of freely passing the water from the Boiler to the flow main.



CONNECTIONS AND TAPPINGS

The tappings of all Ideal Boilers are screwed British Standard threads, and the number, size and position of the flow and return openings and tappings will be as shown in the tables of dimensions and capacities, unless otherwise ordered. All flanged openings of the Britannia Series and Sectional Domestic Boilers are fitted with tapped counterflanges.

Ideal Sectional Boilers are provided with tappings for accessories on top of front section, with the exception of Neo-Classic (on second section), No. 2-GBB (on back section), No. 3-GBC (on end sections), as follows:

IDEAL BOILERS	Top Tappings	No. Size and Type of Nipples, per Section
Sect. Domestic "O" Series	1½ and ½ in.	1-2½ and 2-2 in. push
Sect. Domestic "1" Series	1½ ,, ½ ,,	3-3 in. push
Neo-Classic, No. 1A Series	1½ ,, ½ ,,	2-2 in. screwed
Neo-Classic, No. 2A Series	1½ ,, ½ ,,	2-2½ ,, ,,
0-K Britannia	1-1½ ,,	3-2 in. push
1-K Britannia	1½ ,, 1 ,,	3-2½ ,, ,,
2-K Britannia	1½ ,, 2-1 ,,	1-3 and 2-2½ in. push
3-K Britannia	2-1¼, 1-1½ and 1-½ in.	1-4 ,, 2-3 ,, ,,
4-K Britannia	1-2, 2-1½ ,, 1-½ ,,	1-6 ,, 2-4 ,, ,,
5-K Britannia	1-2½, 1-1½ ,, 2-½ ,,	1-6 ,, 2-5 ,, ,,
Gas, 1-DGA	— —	2-1½ in. screwed
Gas, 2-DGA	— —	2-1½ ,, ,,
Gas, 3-DGA	— —	2-1½ ,, ,,
Gas, 1-GBC Series	— —	2-2 ,, ,,
Gas, 2-GBB ,,	2-¾ in., on back section	1-5 and 2-3 in. push
Gas, 3-GBC ,,	1-1½ in., on each end section	2-6 in. push
Gas, 3-GBC (Steam) Series		
5 to 10 sections	1-2½ in. and 1-1½ in.	2-6 in. push
11 to 13 sections	2-2½ in.	2-6 in. push

An additional charge is made for all outlets and inlets on boilers required in excess of standard.

CONNECTIONS AND TAPPINGS (contd.)

All Ideal Sectional Boilers are tapped on the front section for $\frac{3}{4}$ in. draw-off, with the following exceptions: Nos. 3, 4 and 5 Britannia Series 1 in. Nos. 1A and 2A Neo-Classic and No. 1-GBC Series are tapped $\frac{1}{2}$ in. at back, and No. 3-GBC Series 1 in. at back. For thermometer or thermostat, the Nos. 0 to 3 Series Britannia Boilers have a $\frac{3}{4}$ in. tapping, the No. 4 Series Britannia a 1 in. tapping and the No. 5 Series Britannia can have a $\frac{1}{2}$ in. or $\frac{3}{4}$ in. tapping (in flange) on face of front sections in line with top nipples.

RATING

The heating power of Ideal Boilers has been determined by exhaustive tests made under average conditions of fuel, firing and draught. The ratings in square feet of radiation are based as follows:

Water—a transmission of 160 B.T.U. per square foot per hour.

Steam—a transmission of 256 B.T.U. per square foot per hour.

4 in. Pipe—a transmission of 185 B.T.U. per lineal foot per hour.

NOCO DOORS

Ideal Britannia, Sectional Domestic, Neo-Classic and XLB Domestic Boilers are provided with Noco doors, designed to preheat the secondary air supply, air-cool the baffle plates and give ample access for stoking and cleaning. The heated secondary air is of considerable value when the fuel is smaller than normal or of a reactive nature, effecting an appreciable increase of efficiency.

Primary air damper can be fitted on back section of Nos. 2/3/4/5K and KS Britannia Boilers, to special order.

WATER-COOLED GRATES

The Nos. 2, 3 and 4 Series Britannia Boilers all have water-cooled grate bars which cannot burn out; they also increase the efficiency of the boilers by largely eliminating the formation of clinker, and so keeping the free air space of the grate more constant during the firing period. Alternatively the Nos. 2, 3 and 4 Series Britannia Boilers can be supplied with grill grate bars, or without grate bars if required for Mechanical Stoking or Oil Burning.

INSULATING JACKETS

Insulating Galvanised Steel Jackets can be supplied for Ideal Boilers as listed.

The jackets of the following Boilers can be fitted after the pipe connections are made: Sectional Domestic, No. 3-GBC, and Britannia Series.

STEAM BOILERS

When two or more steam boilers are ordered for battery installation, 2 in. equalising tappings are provided on the end sections of the No. 3-GBC Series Boilers and on the steam drum of the Nos. 2, 3, 4 and 5 Series Britannia Boilers.

MECHANICAL STOKING

Ideal Sectional Domestic and Britannia Series Boilers are suitable for use with mechanical stokers; see pages 92, 93, 96, 97 and 124 to 131.

OIL BURNING

Ideal Boilers can be supplied to accommodate oil burners; see pages 92, 93, 96, 97 and 124 to 131.

HOW BOILERS ARE FORWARDED

All Ideal Sectional Boilers, with the exception of the Neo-Classic, No. 1-GBC and 1, 2 & 3-DGA Gas Boilers, are despatched unassembled for convenience in handling.

Nos. HW-20 to HW-60 Sectional Domestic Boilers for hand-firing, and Nos. HWS and HWO-40 to 60 for mechanical stoking or oil burning, can be despatched assembled when so ordered.

ERECTING AND OPERATING INSTRUCTIONS

Operating Instructions are sent with all Ideal Boilers, also Erecting Instructions where necessary; further copies can be had on application. See pages 72 and 73 for particulars of Foundations and Ashpits. Special wrenches for assembling Boilers are listed on page 138.

ENLARGING SECTIONAL BOILERS

When ordering one or more sections to increase the size of a Sectional Boiler, the following or equivalent wording should be used:

"Necessary sections and nipples to enlarge (say) a No. 26-K Britannia Boiler into a No. 28-K." At the same time it should be stated whether new connecting rods and jacket extension pieces are required.

When adding sections it is only necessary to remove either the front or the back section.

In ordering replace parts, the following information will greatly facilitate prompt execution—

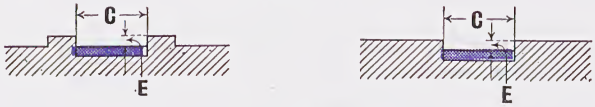
(*a*) Catalogue number.
(*b*) Lettering and foundry serial number on the fire door.
(*c*) Date supplied.
(*d*) When boilers supplied in enamelled finish specify colour.
(*e*) Whenever possible state casting reference number of part required.

FOUNDATION AND ASHPIT DIMENSIONS

BRITANNIA BOILERS

LENGTH

WIDTH



BATTERY

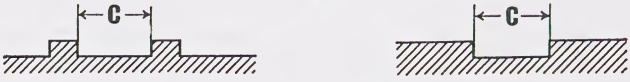
E dimensions indicate 2 in. minimum depth.

Purple portion indicates a further 2 in. minimum of insulated concrete necessary for 5-K Boilers only.

SECTIONAL DOMESTIC BOILERS

LENGTH

WIDTH



GAS BOILERS

No. 2-GBB and 3-GBC Gas Boilers: Dimensioned drawing on application.

FOUNDATION AND ASHPIT DIMENSIONS

BRITANNIA BOILERS

Boiler No.	Dimensions in Inches			Boiler No.	Dimensions in Inches		
	B	C	D		B	C	D
03K	$11\frac{1}{2}$	$10\frac{1}{2}$	—	14K	$17\frac{1}{2}$	16	—
04K	$17\frac{1}{2}$			15K	$23\frac{1}{2}$		
05K	$23\frac{1}{2}$			16K	$29\frac{1}{2}$		
06K	$29\frac{1}{2}$			17K	$35\frac{1}{2}$		
07K	$35\frac{1}{2}$			18K	$41\frac{1}{2}$		
24K	18	$21\frac{1}{2}$	$11\frac{1}{8}$	35K	26	31	$10\frac{3}{4}$
25K	24			36K	33		
26K	30			37K	40		
27K	36			38K	47		
28K	42			39K	54		
29K	48			310K	61		
				311K	68		
47K	41	$38\frac{1}{2}$	$13\frac{3}{4}$	57K	$47\frac{5}{8}$	46	$17\frac{3}{4}$
48K	48			58K	$55\frac{3}{4}$		
49K	55			59K	$63\frac{7}{8}$		
410K	62			510K	72		
411K	69			511K	$80\frac{1}{8}$		
412K	76			512K	$88\frac{1}{4}$		
413K	83			513K	$96\frac{3}{8}$		
414K	90			514K	$104\frac{1}{2}$		
				515K	$112\frac{5}{8}$		

Above dimensions also apply to Britannia Boilers for steam.

SECTIONAL DOMESTIC BOILERS

Boiler No.	Dimensions in Inches		Boiler No.	Dimensions in Inches	
	B	C		B	C
HW-20	7	14	HW-3	14	17
30	13		4	21	
40	19		5	28	
50	25		6	35	
60	31		7	42	
			8	49	

No. O-DE (closed)

No. O-DE (open)

No.	HOT WATER SUPPLY ONLY			Water Contents	Approx. Tank Size	Fuel Capacity
	B.T.U. per hr.	Gallons per hour				
		40°-120°	40°-140°	Gal.	Gal.	Cu. ft.
O-DE	20,000	25	20	2·7	25-30	0·6

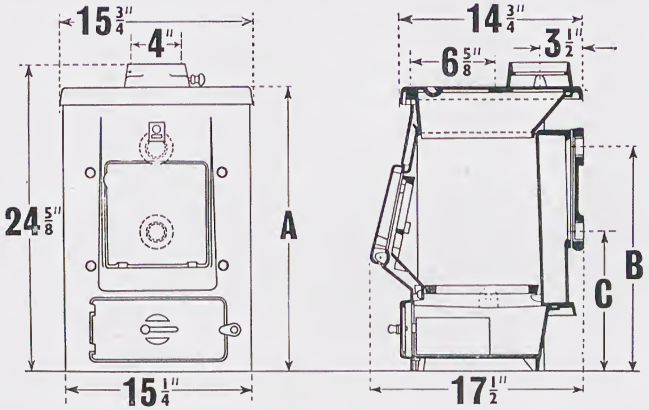
Standard finish: Grey or Cream Mottle Vitreous Enamel.

Boilers **Bower-barffed** (Rust-resistant treatment) available to special order; and are supplied with 1 inch flow and return tappings unless otherwise specified.

Stoking Tools (pages 132–133) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (see pages 155, 156, 159).

OPEN FIRE DOMESTIC BOILER No. O-DE

For Hot Water Supply



Smoke Outlet suitable for spigot end of 4 inch cast-iron smokepipe

DIMENSIONS IN INCHES

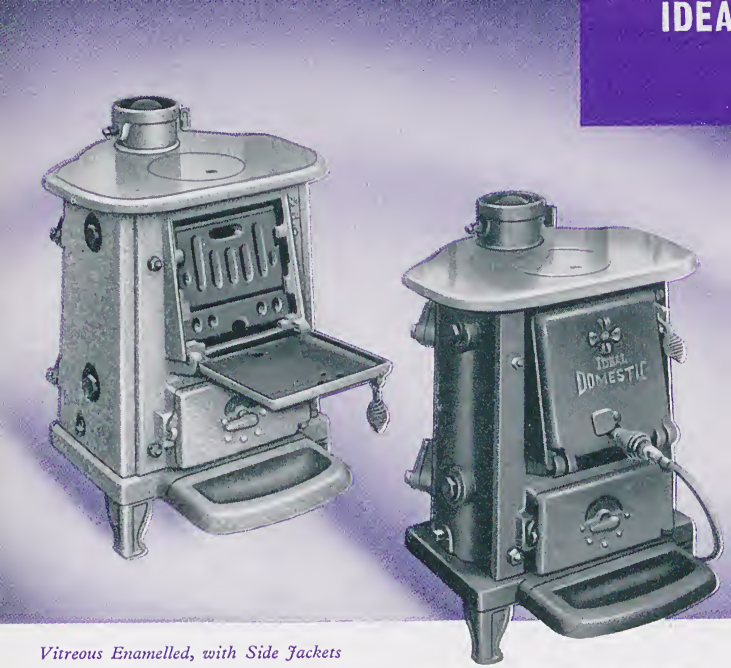
No.	Height to Top Plate A	Height to centre of Flow B	Height to centre of Return C	Tappings in clean-out cover at back		Clean-out opening at back
				Flow	Return	
O-DE	$22\frac{3}{4}$	18	$11\frac{1}{4}$	1-$1\frac{1}{4}$	1-$1\frac{1}{4}$	8 × $6\frac{1}{2}$

Side tappings can be provided at extra charge.

Where the Smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar can be supplied for making tight joint. Available in alternative finishes (see page 136).

Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron chimney is used, 6 in. is minimum size. 4 in. by 6 in. Adapter for making 6 in. flue connection, available in alternative finishes (see page 136).

For particulars of smokepipe, elbows, etc., see pages 134–136.



Vitreous Enamelled, with Side Jackets

Black painted finish with Gas Poker

No.	HOT WATER SUPPLY ONLY			Water Contents	Approx. Tank Size	Fuel Capacit
	B.T.U. per hr.	Gallons per hour				
		40°-120°	40°-140°	Gal.	Gal.	Cu. ft.
L00	20,000	25	20	$3\frac{1}{4}$	25-30	0·49

When ordering specify Grey or Cream Mottle, otherwise ordinary Black finish (not enamelled) will be supplied.

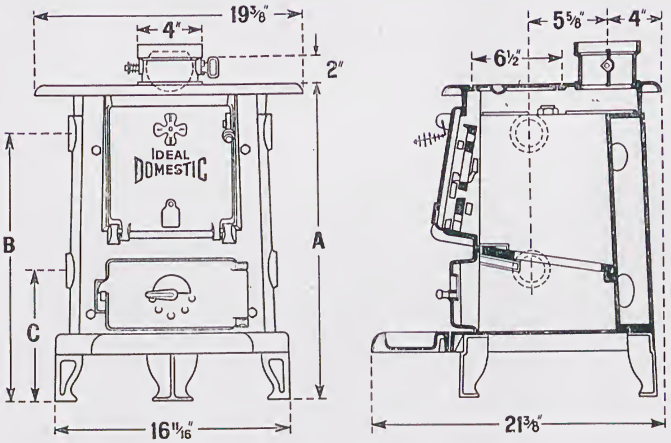
Boilers **Bower-barffed** (Rust-resistant treatment) available to special order.

When supplied Grey or Cream Mottle, boiler body is painted plain Grey. Side Jackets are extra to order. Shaking Grate available.

Stoking Tools, pages 132 and 133. Draw-off Cock (page 159) and Baseplate supplied unless otherwise ordered. All Accessories extra, (see pages 155, 156, 159.)

OPEN FIRE DOMESTIC BOILER No. L00

For Hot Water Supply



Smoke Outlet suitable for spigot end of 4 inch cast-iron smokepipe

DIMENSIONS IN INCHES

HEATING ONLY		Height to Top Plate A	Height to Centre of Flow B	Height to Centre of Return C	Tappings Flow and Return	Number and Size of Clean-out Openings
B.T.U. per hr.	Direct Radiation Sq. ft.	Including Baseplate (4¾ in.)				
8,800	55	22½	19 3/16	9⅜	1½	2-2 2-2½

Specify size of tappings required and whether on right or left of boiler.

Where the Smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar can be supplied for making tight joint. Available in alternative finishes (see page 136).

Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron chimney is used, 6 in. is minimum size. 4 in. by 6 in. Adapter for making 6 in. flue connection, available in alternative finishes (see page 136).

4½ in. smoke outlet can be supplied if specially ordered.

For particulars of smokepipe, elbows, etc., see pages 134–136.

IDEAL OPEN

No. L2, Vitreous Enamelled, with Side Jackets and Baseplate

No. L1, in Black finish, with Baseplate and Gas Poker

No.	HOT WATER SUPPLY ONLY			Water Contents	Approx. Tank Size	Fuel Capacity
	B.T.U. per hr.	Gallons per hour				
		40°-120°	40°-140°	Gal.	Gal.	Cu. ft.
L1	25,000	31	25	4	30-40	0·65
L2	40,000	50	40	5¼	40-50	0·85

When ordering specify Grey or Cream Mottle, otherwise ordinary Black finish (not enamelled) will be supplied.

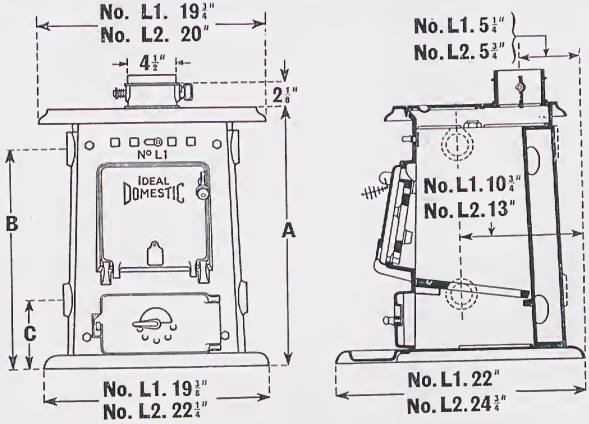
Boilers **Bower-barffed** (Rust-resistant treatment) available to special order.

When supplied Grey or Cream Mottle, boiler body is painted plain Grey. Side Jackets are extra to order.

Stoking Tools (pages 132–133), Draw-off Cock (page 159) and Baseplate supplied unless otherwise ordered. Shaking Grate for No. L1 available. All Accessories extra (pages 155, 156, 159).

FIRE DOMESTIC BOILERS No. L1 & L2

For Hot Water Supply



Smoke Outlet suitable for spigot end of 4½ inch cast-iron smokepipe

DIMENSIONS IN INCHES

HEATING ONLY		*Height to Top Plate	*Height to Centre of Flow	*Height to Centre of Return	Tappings Flow and Return	Number and Size of Clean-out Openings
B.T.U. per hr.	Direct Radiation Sq. ft.	A	B	C		
11,250	70	22 5/16	18 13/16	5 13/16	1½	4-2½
18,000	110	23¼	19¾	5 13/16	1½	4-3½

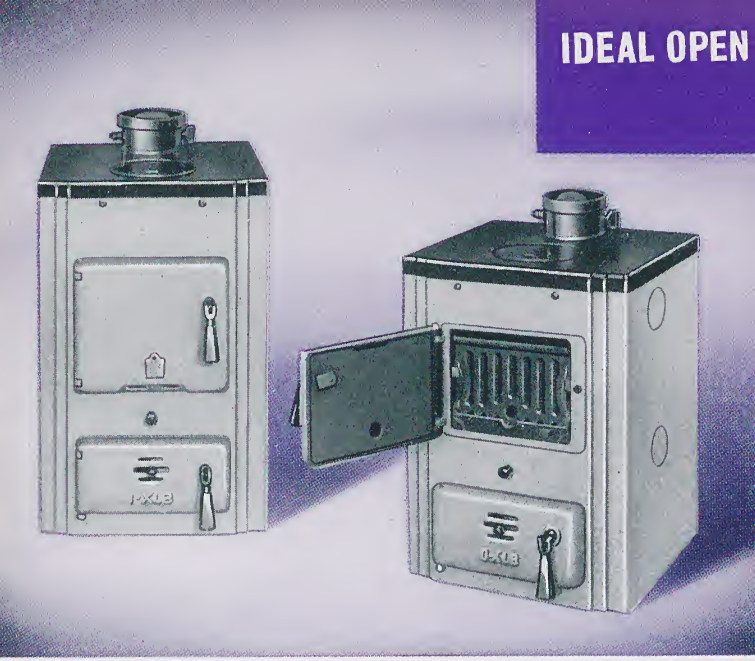
* *Including Baseplate (No. L1 and L2, 1 1/16 inch).*

Specify size of tappings and whether on right or left of boiler.

Where the Smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar can be supplied for making tight joint. Available in alternative finishes (see page 136).

Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron chimney is used, 6 in. is minimum size. 4½ in. by 6 in. Adapter for making 6 in. flue connection, available in alternative finishes (see page 136).

For particulars of smokepipe, elbows, etc., see pages 134–136.



No. 0-XLB. *No. 1-XLB.*

No.	HOT WATER SUPPLY ONLY			Water Contents	Approx. Tank Size	Fuel Capacity
	B.T.U. per hr.	Gallons per hour				
		40°-120°	40°-140°	Gal.	Gal.	Cu. ft.
0-XLB	20,000	25	20	3¼	25-30	0·5
1-XLB	25,000	31	25	4	30-40	0·65

Standard Finish: Grey Mottle Vitreous Enamel with top plate and smokehood enamelled Black. Supplied in Cream Mottle Vitreous Enamel, with top plate and smokehood enamelled Black, to special order.

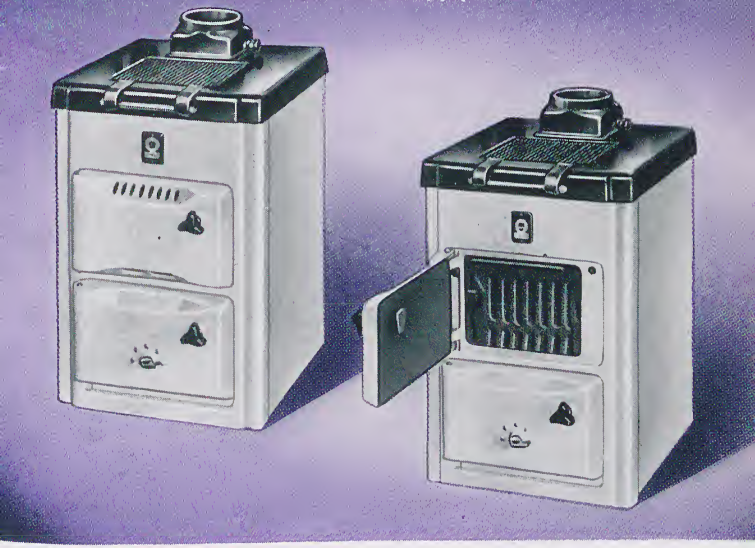
Boilers **Bower-barffed** (Rust-resistant treatment) available to special order.

Rocking grate is regularly supplied with these boilers. Provided with "Noco" doors (see page 70).

Stoking Tools (pages 132–133) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (see pages 155, 156, 159).

FIRE DOMESTIC BOILER No. O-XLC

For Hot Water Supply



No. O-XLC (closed) *No. O-XLC (open)*

No.	HOT WATER SUPPLY ONLY			Water Contents	Approx. Tank Size	Fuel Capacit
	B.T.U. per hour	Gallons per hour				
		40°-120°	40°-140°	Gal.	Gal.	Cu. ft.
O-XLC	20,000	25	20	2·7	25·30	0·6

Standard Finish: Grey Mottle Vitreous Enamel with top plate and smokehood enamelled Black. Supplied in Cream Mottle Vitreous Enamel, with top plate and smokehood enamelled Black, to special order.

Boilers **Bower-barffed** (Rust-resistant treatment) available to special order; and are supplied with 1 inch flow and return tappings unless otherwise specified.

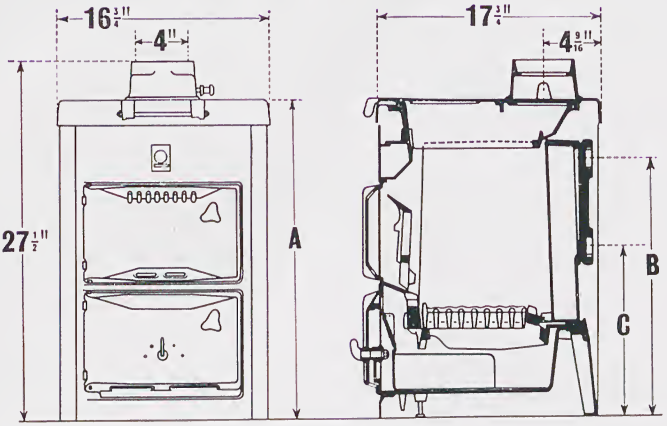
Rocking grate is regularly supplied with these boilers.

Stoking Tools (pages 132-133) and Draw-off Cock (page 159) supplied unless otherwise ordered. All accessories extra (see pages 155, 156, 159).

This Boiler replaces the No. O-XLB appearing on page 80.

IDEAL OPEN FIRE DOMESTIC BOILER No. O-XLC

For Hot Water Supply



Smoke Outlet suitable for spigot end of 4-inch cast-iron smokepipe

DIMENSIONS IN INCHES

No.	Height to top plate A	Height to centre of flow B	Height to centre of return C	Tappings in clean-out cover at back		Clean-out opening at back
				Flow	Return	
O-XLC	24½	19¾	13	1-1¼	1-1¼	8 × 6½

Side tappings, right or left hand, can be provided at extra charge.

When the Smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar in Black Enamel can be supplied for making tight joint (see page 136).

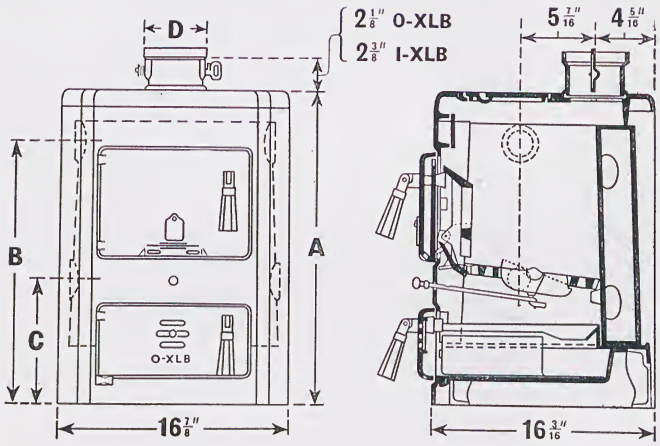
Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron chimney is used, 6 in. is minimum size, 4 in. by 6 in. Adapter for making 6 in. flue connection available in Black Enamel (see page 136).

For particulars of smokepipe, elbows, etc., see pages 134-136.

This Boiler replaces the No. O-XLB appearing on page 81.

FIRE DOMESTIC BOILERS No. 0 & 1-XLB

For Hot Water Supply



Smokehood Socket suitable for spigot end of cast-iron smokepipe

DIMENSIONS IN INCHES

HEATING ONLY		Height to Top Plate	Height to Centre of Flow	Height to Centre of Return	Smoke-pipe Size	Tappings Flow and Return	No. and Size of Clean-out Openings
B.T.U. per hr.	Direct Radiation Sq. ft.	A	B	C	D		
8,800	55	22 3/4	19 1/16	9 1/4	4	1 1/2	2-2
11,250	70	26 1/4	22 1/2	9 1/2	4 1/2	1 1/2	2-2 1/2
							4-2 1/2

Specify size of tappings required, and whether on right or left-hand side of boiler.

When smokehood will pass through blanking-off plate at base of chimney flue, a cast-iron collar in Black Enamel can be supplied for making tight joint (see page 136).

Smokepipe and Elbows should not be less than size of smoke outlet. When independent cast-iron chimney is used, 6 in. is the minimum size. 4 in. by 6 in. or 4½ in. by 6 in. Adapter for making 6 in. flue connection available in Black Enamel (see page 136).

For particulars of smokepipe, elbows, etc., see pages 134–136.

Boiler is dispatched assembled ready for installation.

Ideal No. 1 'Autocrat'	HOT WATER SUPPLY ONLY			Water Contents	Fuel Capacity
	B.T.U. per hour	Gallons per hour			
		40°-120°	40°-140°	Gal.	Cu. ft.
	25,000	31	25	2·7	0·6

Thermostatic Control supplied as standard with boiler. Operated by a small Control Knob positioned right-hand side of front panel.

Boilers **Bower-barffed** (Rust-resistant treatment) available to special order.

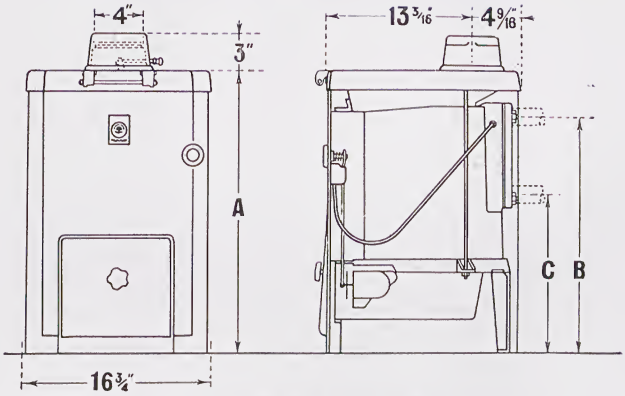
Standard Finish: Black and Cream or Black and White Vitreous Enamel, with Jacket Cream or White Stove Enamelled.

Rocking grate incorporating dumping device is a standard component of these boilers (Patent pending No. 7124/54).

Boiler is supplied complete with a set of Stoking Tools (comprising Shovel, Straight Slice Bar and combined Rocking Lever and Lifter). Draw-off Cock supplied unless otherwise ordered (page 159). All Accessories extra (see pages 155, 156, 159).

IDEAL 'AUTOCRAT' DOMESTIC BOILER No. 1

Thermostatically Controlled - for Hot Water Supply



Smokehood Socket suitable for spigot end of 4 inch cast-iron smokepipe.

DIMENSIONS IN INCHES

Approx. Tank Size Gal.	Height to Top Plate A	Height to centre of Flow B	Height to centre of Return C	*Tappings in clean-out cover at back		Clean-out Opening in back
				Flow	Return	
30-40	25¾	21¼	14½	1-1¼	1-1¼	8 × 6½

* *Boilers with Bower-barffed firepots supplied with 1-in. Flow and Return tappings unless otherwise specified.*

Where the Smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar in Black Enamel can be supplied for making tight joint (see page 136).

Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron chimney is used, 6 in. is minimum size.

For particulars of smokepipe, elbows, etc., see pages 134, 136.

Boiler is dispatched assembled ready for installation.

Ideal No. 2A 'Autocrat'	HOT WATER SUPPLY ONLY			Water Contents	Fuel Capacity
	B.T.U. per hour	Gallons per hour			
		40°-120°	40°-140°	Gal.	Cu. Ft.
	40,000	50	40	5·2	1·0

Thermostatic Control supplied as standard with boiler. Operated by a small Control Knob positioned right-hand side of front panel.

Boilers **Bower-barffed** (Rust-resistant treatment) available to special order.

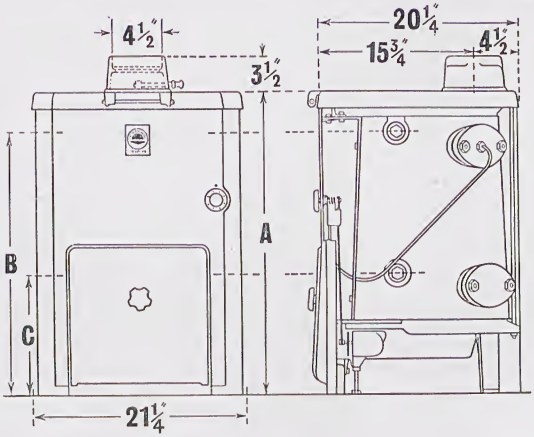
Standard Finish: Black and Cream Vitreous Enamel, with Jacket Cream Stove Enamelled.

Rocking grate incorporating dumping device is a standard component of these boilers (Patent pending No. 7124/54).

Boiler is supplied complete with a set of Stoking Tools (comprising Shovel, Straight Slice Bar and combined Rocking Lever and Lifter). Draw-off Cock supplied unless otherwise ordered (page 159). All Accessories extra (see pages 155, 156, 159).

IDEAL 'AUTOCRAT' DOMESTIC BOILER No. 2A

Thermostatically Controlled - for Hot Water Supply



Smokehood Socket suitable for spigot end of 4½ inch cast-iron smokepipe.

DIMENSIONS IN INCHES

Approx. Tank Size Gal.	Height to Top Plate A	Height to centre of Flow B	Height to centre of Return C	*Tappings Flow and Return	Cleanout Openings
40-50	30	$25\frac{15}{16}$	12	$1\frac{1}{2}$	$4\text{-}3\frac{1}{2}$

* *Specify size of tappings required, and whether on right- or left-hand side of boiler. Tappings will be on left-hand side only unless otherwise ordered.*

Where the Smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar in Black Enamel can be supplied for making tight joint (see page 136).

Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron chimney is used, 6 in. is minimum size.

For particulars of smokepipe, elbows, etc., see pages 134, 136.

No. 5D, with Baseplate and Damper Regulator *No. 4D, with Baseplate and Gas Poker*

No.	HOT WATER SUPPLY ONLY			Water Contents	Approx. Tank Size	Fuel Capacity	Heatin Surfac
	B.T.U. per hr.	Gallons per hr.					
		40°-120°	40°-140°	Gal.	Gal.	Cu. ft.	Sq. ft
4D	38,500	47	38	6	40-50	0·65	3½
5D	49,500	61	49	8	50-60	0·80	4½
6D	66,000	82	66	12½	60-80	1·25	6

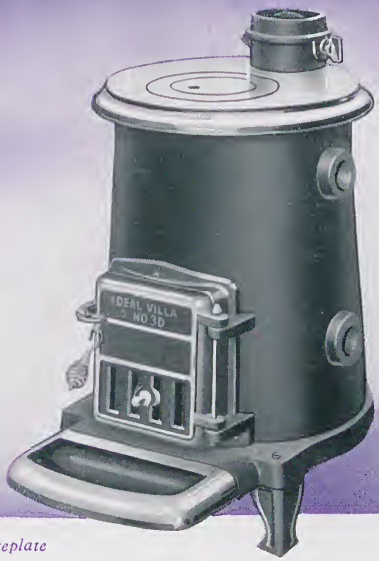
Boilers **Bower-barffed** (Rust-resistant treatment) available to special order. A No. 802 Ideal Damper Regulator (page 159) can be supplied for automatic regulation, when a bottle and lifting ashpit damper will be provided. For Bower-barffed boilers a brass water bottle is supplied.

All Boilers are supplied with polished top.

Stoking Tools (pages 132–133), Draw-off Cock (page 159) and Baseplate supplied unless otherwise ordered. All Accessories extra (pages 155, 156, 159).

IDEAL DOMESTIC BOILER No. 3D

For Hot Water Supply



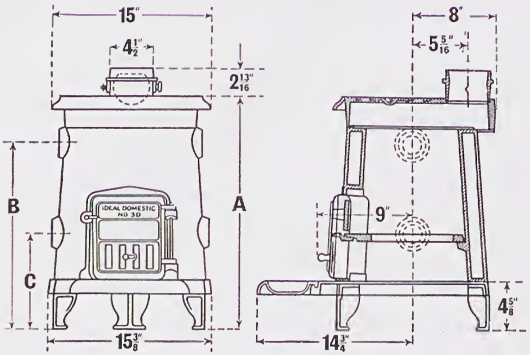
Boiler with Baseplate

This Boiler has been specially designed to meet the demand for a small and inexpensive type **for use in districts where the water contains little or no lime in solution,** with consequent absence of deposit and necessity for cleaning. **Bower-barffed** (Rust-resistant treatment) firepots available to special order.

Baseplate, Stoking Tools (consisting of Poker, Slice Bar, Shovel and Clinker Tool), and Draw-off Cock (see page 159) supplied only when ordered.

IDEAL DOMESTIC BOILER No. 3D

For Hot Water Supply



Smoke Outlet suitable for spigot end of 4½ in. cast-iron smokepipe

RATINGS, CAPACITIES & DIMENSIONS

No.	HOT WATER SUPPLY ONLY			Water Contents	Approx. Tank Size	Fuel Capacity	Heating Surface
	B.T.U. per hr.	Gallons per hour					
		40°-120°	40°-140°	Gal.	Gal.	Cu. ft.	Sq. ft.
3D	25,000	31	25	1·13	30-40	0·55	2¼

DIMENSIONS IN INCHES

No.	HEATING ONLY		Height to Top Plate A	Height to Centre of Flow B	Height to Centre of Return C	Tappings Flow and Return
	B.T.U. per hr.	Direct Radiation Sq. ft.				
3D	11,250	70	22⅛	17 5/16	9⅛	1¼

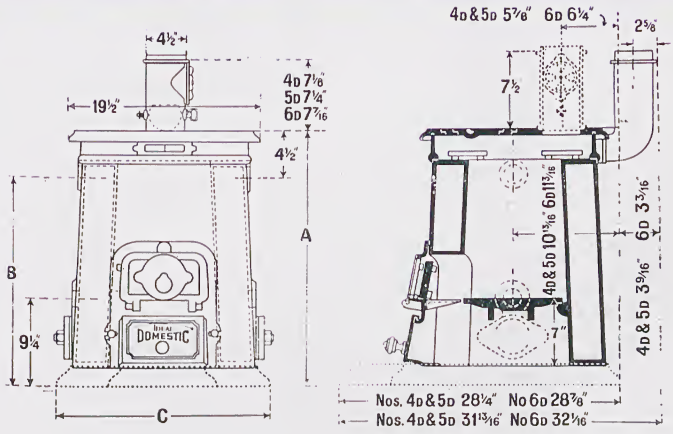
Specify size of tappings required and whether on right or left of boiler

Where the smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar can be supplied for making tight joint (see page 136).

Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron or sheet-iron chimney is used, 6 in. is minimum size. 4½ in. × 6 in. Adapter for making 6 in. flue connection (see pages 134–136).

IDEAL DOMESTIC BOILERS No. 4, 5 & 6D

For Hot Water Supply



Smoke Outlet suitable for spigot end of 4½ in. cast-iron smokepipe

DIMENSIONS IN INCHES

HEATING ONLY		*Height Floor to Top Plate	*Height to Centre of Flow	Dia. of Base-plate	Tappings Flow and Return	Number and Size of † Clean-out Openings	
B.T.U. per hr.	Direct Radiation Sq. ft.	A	B	C		Top	Bottom
15,200	95	22¼	17¾	21⅜	1½	4—2	2-3½
19,200	120	26⅛	21¾	21⅜	1½	4—2	2-3½
26,800	170	33 1/16	29¼	22⅜	1½	4—2	2-3½

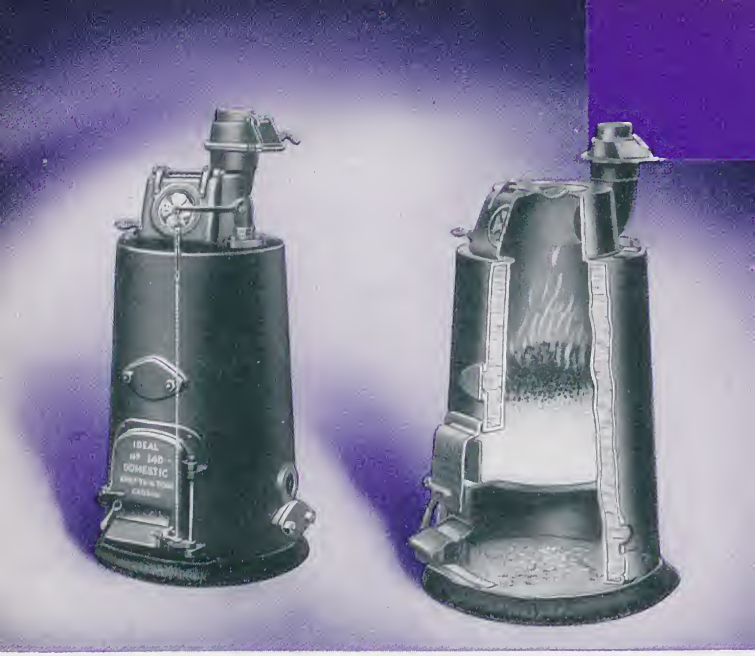
* *Including baseplate (2¼ in.).* † *No. 6D has also 1–3½ in. clean-out at front.*

Specify size of tappings required and whether on right or left of boiler.

Where smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar can be supplied for making tight joint.

Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron chimney is used, 6 in. is the minimum size. 4½ in. by 6 in. Adapter for making 6 in. flue connection is available. Top smoke outlet for 4½ in. smokepipe can be supplied.

For particulars of smokepipe, elbows, etc., see pages 134–136.



No. 14D, with Baseplate and Damper Regulator *No. 15D, cut view with Baseplate*

No.	HOT WATER SUPPLY ONLY				Water Contents	Fuel Capacity	Heating Surface
	B.T.U. per hr.	Gallons per hour					
		40°-120°	40°-140°	40°-160°	Gal.	Cu. ft.	Sq. ft.
14D	99,000	123	99	82	17	1·90	9
15D	132,000	165	132	110	21	2·95	12

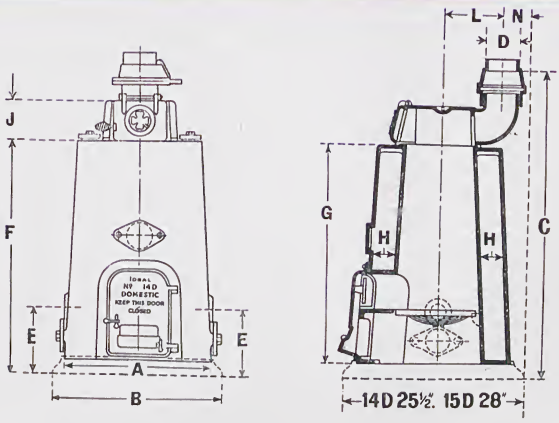
HEATING ONLY	B.T.U. per hour	Direct Radiation
14D	34,800	215 Sq. ft.
15D	53,500	335 Sq. ft.

Boilers **Bower-barffed** (Rust-resistant treatment) available to special order. When automatic regulation is required a No. 802 Ideal Damper Regulator is provided as shown (page 159).

Stoking Tools (pages 132–133), Draw-off Cock (page 159) and Baseplate supplied unless otherwise ordered. All Accessories extra (pages 155, 156, 159).

IDEAL DOMESTIC BOILERS No. 14 & 15D

For Hot Water Supply



Smoke Outlet suitable for socket end of cast-iron smokepipe

DIMENSIONS IN INCHES

No.	A	B	*C	D	*E	*F	G	H	J	L	N
14D	$22\frac{3}{8}$	$25\frac{1}{2}$	48	$4\frac{1}{2}$	$9\frac{1}{4}$	$35\frac{1}{4}$	33	3	$7\frac{9}{16}$	$8\frac{1}{2}$	$4\frac{1}{4}$
15D	$24\frac{7}{8}$	28	$51\frac{7}{16}$	6	$9\frac{1}{2}$	$38\frac{1}{2}$	36	3	$7\frac{1}{4}$	$10\frac{1}{2}$	$3\frac{1}{2}$

No.	Number and Size of Tappings		Number and Size of Clean-out Openings		
	Flow	Return	Top	Bottom	Centre
14D & 15D	2—2	2—2	4—$2\frac{1}{2}$	2—$3\frac{1}{2}$	1—$3\frac{1}{2}$

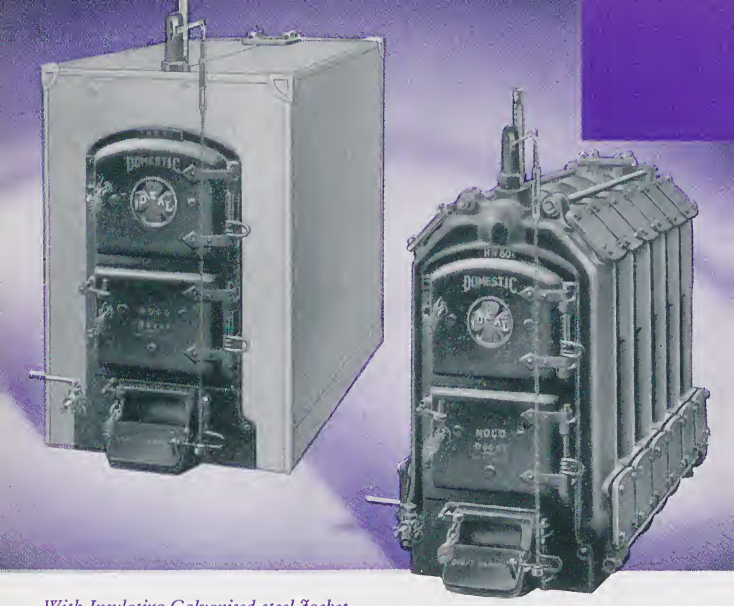
* *Including Baseplate (No. 14D, $2\frac{1}{4}$ in.; No. 15D, $2\frac{1}{2}$ in.)*

Specify size of tappings required and whether on right or left of boiler.

Where the Smokepipe will pass through blanking-off plate at base of chimney flue, a cast-iron collar can be supplied for making tight joint (see page 136).

Smokepipe and Elbows should not be less than size of smoke outlet. Where independent cast-iron chimney is used, 6 in. is the minimum size. For the 14D Boiler a $4\frac{1}{2}$ in. by 6 in. Adapter for making 6 in. flue connection is available (see page 136).

For particulars of smokepipe, elbows, etc., see pages 134–136.



With Insulating Galvanised-steel Jacket, Damper Regulator and Thermometer

Without Jacket

No.	B.T.U. per hr.	Gallons per hr. 40°-140°	Water Contents Gal.	*Fuel Capacity Cu. ft.	Heating Surface Sq. ft.
HW-20	68,750	68	8·8	1·4	6·25
HW-30	99,550	99	11·2	2·2	9·05
HW-40	130,350	130	13·6	3·0	11·85
HW-50	161,150	161	16·0	3·8	14·65
HW-60	191,950	191	18·4	4·6	17·45

* *Available for fuel under working conditions.*

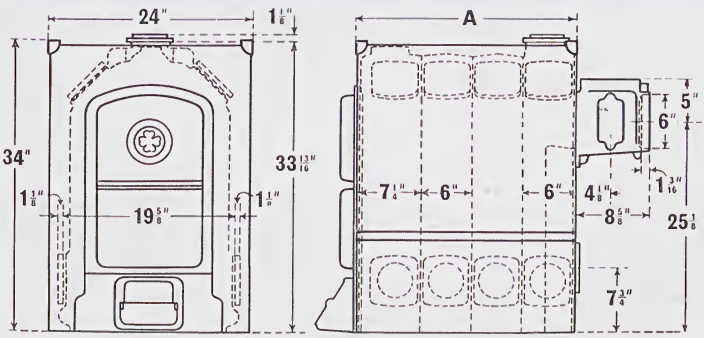
Boilers **Bower-barffed** (Rust-resistant treatment) available to special order. Should additional plugs or bushings be needed, special brass fittings, with threads to cover the full depth of tappings, can be supplied.

Insulating Galvanised Steel Jackets are available as an extra. When ordering state size and position of tappings. Jackets and doors can be supplied in vitreous enamel finish.

When automatic regulation is required, a No. 802 Ideal Damper Regulator is provided as shown (page 159). Grate Bars: Grill Pattern.

Stoking Tools (page 132) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159).

Boilers for Mechanical Stoking & Oil Burning, pages 92–93.



Smokehood, with Socket Outlet at top or back for spigot end of 6 in. cast-iron smokepipe

DIMENSIONS IN INCHES

Number of Sections	Length of Boiler A	Flanged Connections		No. and Size of Clean-out Openings Top and Bottom each side
		†Flow	Return	
2	$14\frac{1}{4}$	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	8-4
3	$20\frac{1}{4}$	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	12-4
4	$26\frac{1}{4}$	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	16-4
5	$32\frac{1}{4}$	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	20-4
6	$38\frac{1}{4}$	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	24-4

† Flow connections on top of back section. If specially ordered, can be provided on any intermediate section.

Return connection on face of back section. If specially ordered, can be on either side of intermediate section; height to centre $6\frac{3}{16}$ in.

An additional flow on top, or return at either side of any intermediate section, will be supplied to special order without extra charge.

3 in. flow and return connections can be provided if specified on order.

Jackets can be fitted after pipe connections have been made.

Foundation and Ashpit dimensions (pages 72–73), Accessory Tappings (page 69).

For particulars of smokepipe, elbows, etc., see pages 134–136.

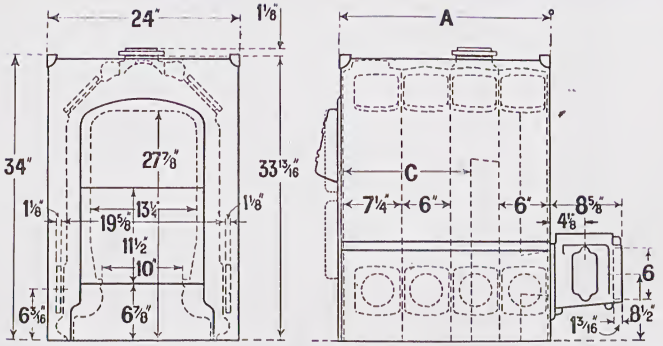
For Oil Burning, with Insulating Jacket *For Mechanical Stoking, without Jacket*

No.		B.T.U. per hour	Gallons per hour 40°-140°	Water Capacity Gal.	Heating Surface Sq. ft.
Mechanical Stoking	Oil Burning				
HWS-40	HWO-40	147,500	147	16·4	14·75
HSW-50	HWO-50	175,500	175	18·8	17·55
HWS-60	HWO-60	203,500	203	21·2	20·35
HWS-70	HWO-70	231,500	231	23·6	23·15
HWS-80	HWO-80	259,500	259	26·0	25·95

Boilers **Bower-barffed** (Rust-resistant treatment) available to special order. Should additional plugs or bushings be needed, special brass fittings, with threads to cover the full depth of tappings, can be supplied.

Insulating Galvanised Steel Jackets are available as an extra. When ordering state size and position of tappings. Jackets and doors can be supplied in vitreous enamel finish.

Draw-off Cock (page 159) and Flexible Flue Brush supplied unless otherwise ordered. All accessories extra (pages 154–157).



Smokehood with Socket Outlet at top or back for spigot end of 6 in. cast-iron smokepipe.

DIMENSIONS IN INCHES

Length of Boiler A	Length of Firebox C	Flanged Connections		No. and Size of Clean-out Openings Top and Bottom each side
		Flow	Return	
$26\frac{1}{4}$	16	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	16-4
$32\frac{1}{4}$	22	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	20-4
$38\frac{1}{4}$	28	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	24-4
$44\frac{1}{4}$	34	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	28-4
$50\frac{1}{4}$	40	$1\text{-}2\frac{1}{2}$	$1\text{-}2\frac{1}{2}$	32-4

Return connections on either side of any intermediate section.

An additional flow on top, or return at either side, will be provided to special order without extra charge. 3 inch flow and return connections can be provided if specified on order.

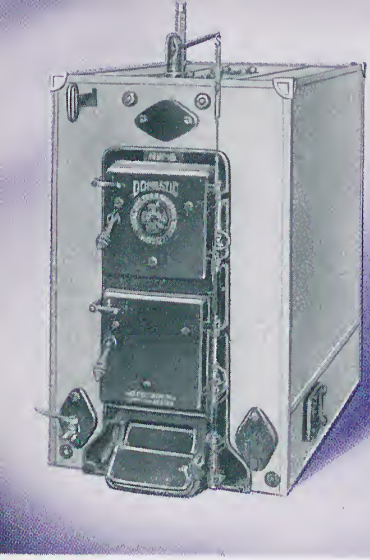
Jackets can be fitted after pipe connections have been made.

Maximum projection of Noco firedoors when open, 14 in. (Mechanical Stoking).

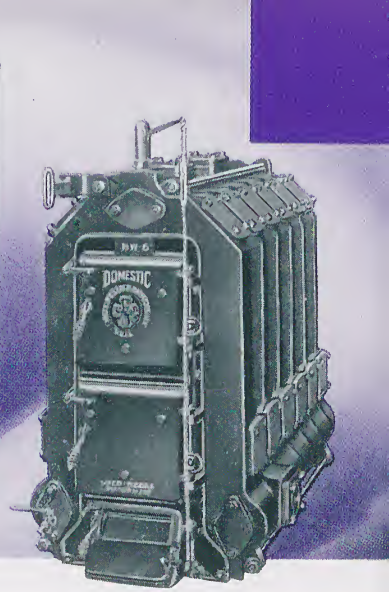
A special opening is provided on each side of the boiler between the last sections, to give access for cleaning the flue.

Details of foundation, etc., should be obtained from the manufacturer of the Mechanical Stoker or Oil Burner.

For particulars of smokepipe, elbows, etc., see pages 134–136.



With Insulating Galvanised-steel Jacket



Without Jacket

No.	B.T.U. per hour	Gallons per hour 40°-140°	Water Contents Gal.	*Fuel Capacity Cu. ft.	Heating Surface Sq. ft.
HW-3	154,000	154	21·0	3·3	14·00
HW-4	200,750	200	25·5	4·6	18·25
HW-5	247,500	247	30·0	6·0	22·50
HW-6	294,250	294	34·5	7·3	26·75
HW-7	341,000	341	39·0	8·6	31·00
HW-8	387,750	387	43·5	10·0	35·25

* *Available for fuel under working conditions.*

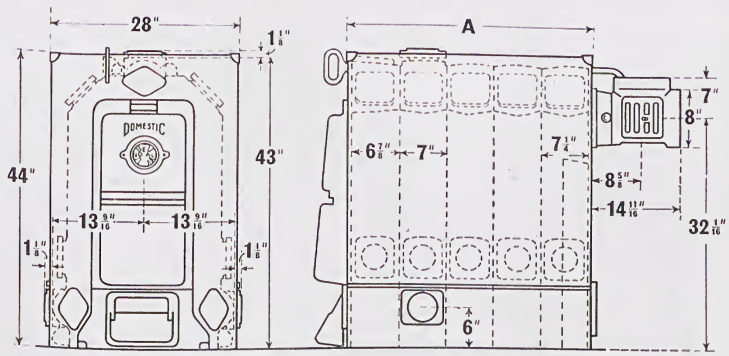
Boilers **Bower-barffed** (Rust-resistant treatment) available to special order. Should additional plugs or bushings be needed, special brass fittings, with threads to cover the full depth of tappings, can be supplied.

Insulating Galvanised Steel Jackets are available as an extra. When ordering, state size and position of tappings. Jackets and doors can be supplied in vitreous enamel finish.

When automatic regulation is required a No. 802 Ideal Damper Regulator is provided as shown (page 159). Grate Bars: Grill Pattern.

IDEAL SECTIONAL DOMESTIC BOILERS No. 1

Hot Water Supply. Hand Firing. SERIES



Smokehood with Socket Outlet at back, top or side for spigot end of 8 in. cast-iron smokepipe; fitted with checkdraught damper and cleaning door.

DIMENSIONS IN INCHES

Number of Sections	Length of Boiler *A	Flanged Connections		No. & Size of Clean-out Openings		
		Flow	Return	Top & Bottom each side	Front	Back
3	22 1/8	1-3	1-3	12-4	3-3 3/8	2-3 3/4
4	29 1/8	1-3	1-3	16-4	3-3 3/8	2-3 3/4
5	36 1/8	1-3	1-3	20-4	3-3 3/8	2-3 3/4
6	43 1/8	2-3	2-3	24-4	3-3 3/8	2-3 3/4
7	50 1/8	2-3	2-3	28-4	3-3 3/8	2-3 3/4
8	57 1/8	2-3	2-3	32-4	3-3 3/8	2-3 3/4

* *For Foundation and Ashpit Dimensions, see pages 72–73.*

Jackets can be fitted after pipe connections have been made.

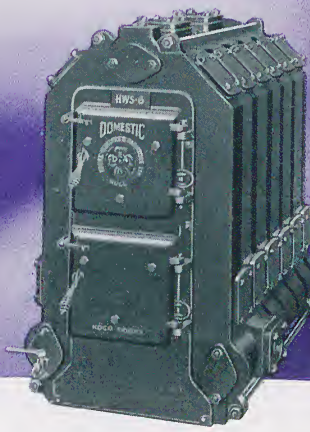
For details of Accessory Tappings, see pages 69–70.

Stoking Tools (page 132) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159).

Boilers for Mechanical Stoking and Oil Burning, see pages 96–97.

For particulars of smokepipe, elbows, etc., see pages 134–135.

For Oil Burning, with Insulating Jacket



For Mechanical Stoking, without Jacket

No.		B.T.U. per hour	Gallons per hour 40°-140°	Water Capacity	Heating Surface
Mechanical Stoking	Oil Burning			Gal.	Sq. ft.
HWS-3	HWO-3	140,000	140	21·0	*14·00
HWS-4	HWO-4	240,000	240	31·5	24·00
HWS-5	HWO-5	282,500	282	36·0	28·25
HWS-6	HWO-6	325,000	325	40·5	32·50
HWS-7	HWO-7	367,500	367	45·0	36·75
HWS-8	HWO-8	410,000	410	49·5	41·00
HWS-9	HWO-9	452,500	452	54·0	45·25
HWS-10	HWO-10	495,000	495	58·5	49·50

* *For the three-section boiler, the back section and smokehood corresponds to that of the same size coke-fired boiler, see page 95.*

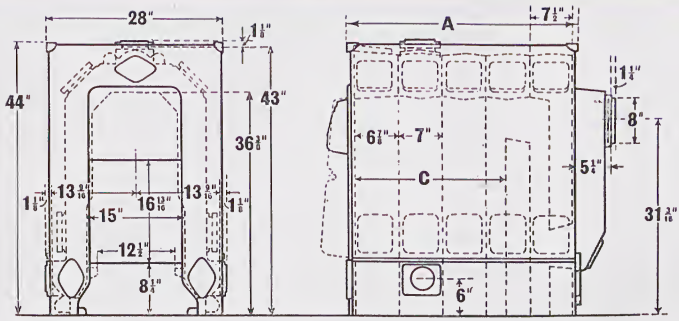
Boilers **Bower-barffed** (Rust-resistant treatment) available to special order. Should additional plugs or bushings be needed, special brass fittings, with threads to cover the full depth of tappings, can be supplied.

Insulating Galvanised Steel Jackets are available as an extra. When ordering state size and position of tappings. Jackets and doors can be supplied in vitreous enamel finish.

Draw-off Cock (page 159) and Flexible Flue Brush supplied unless otherwise ordered. All Accessories extra (pages 154–157).

IDEAL SECTIONAL DOMESTIC BOILERS No. 1

Hot Water Supply. Mechanical Stoking and Oil Burning. SERIES



Smoke Outlet suitable for spigot end of 8 in. cast-iron smokepipe.

DIMENSIONS IN INCHES

Length of Boiler A	Length of Firebox C	Flanged Connections		Clean-out Openings		
		Flow	Return	Top & Bottom each side	Front	Back
22⅛	17	1-3	1-3	12-4	3-3⅜	2-3¾
29⅜	17	1-3	1-3	16-4	3-3⅜	2-3¾
36⅜	24	1-3	1-3	20-4	3-3⅜	2-3¾
43⅜	31	2-3	2-3	24-4	3-3⅜	2-3¾
50⅜	38	2-3	2-3	28-4	3-3⅜	2-3¾
57⅜	45	2-3	2-3	32-4	3-3⅜	2-3¾
64⅜	52	3-3	3-3	36-4	3-3⅜	2-3¾
71⅜	59	3-3	3-3	40-4	3-3⅜	2-3¾

A special opening is provided on each side of the boiler between the last two sections, to give access for cleaning the flue, except in the case of the three-section boiler, which has no flue travel.

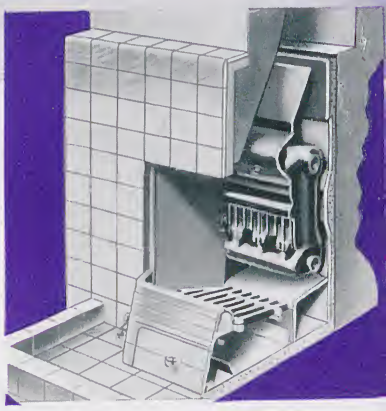
Jackets can be fitted after pipe connections have been made.

Maximum projection of Noco firedoors when open, 16⅝ in. (Mechanical Stoking).

Details of foundation, etc., should be obtained from the manufacturer of the Mechanical Stoker or Oil Burner.

For particulars of smokepipe, elbows, etc., see pages 134–135.

Shown fitted in a typical tile surround and hearth.



Sectional view of No. 2C Neofire

The Ideal No. 2C Neofire is designed to take care of approximately 40 sq. ft. of radiation, plus an average amount of piping, and to provide hot water for domestic purposes by the "indirect" method with the No. 00 or No. 00C Ideal Indirect Cylinder (20 gals.).

It has a specially designed boiler with 1¼ in. flow and return tappings on both sides. This appliance is designed to burn coke or anthracite, but will also operate efficiently on coal. (A special heat-resisting steel grate bar can be supplied to order at an extra charge.) It is fitted with a gas ignition burner.

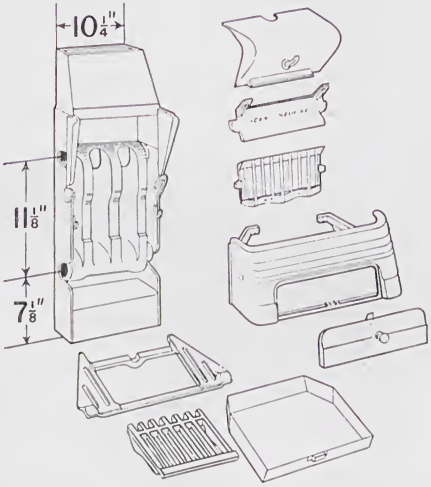
Standard Vitreous Enamel finishes: Cream Mottle; Black; Copper Lustre. Gas ignition cock is provided as standard on left-hand side, but can be furnished on right-hand side to special order.

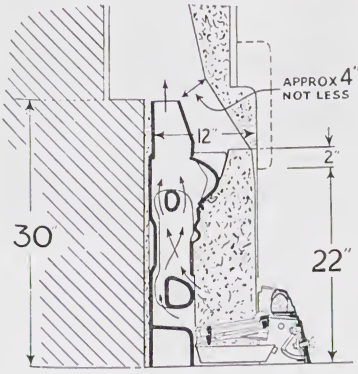
IDEAL NEOFIRE No. 2C

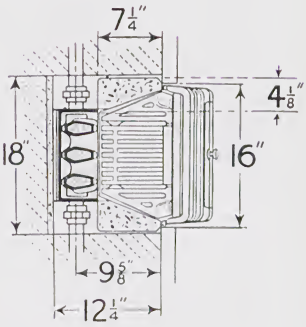
For Heating and Indirect Hot Water Supply

Brit. Patent No. 591977

DIMENSIONS IN INCHES



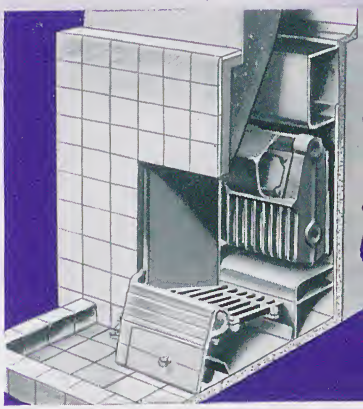




Set of Stoking Tools provided comprising Bent Poker, Flue Brush and Ashpan Lifter.

See pages 162–163 *for details of Indirect Cylinders.*

Shown fitted in a typical tile surround and hearth.



Sectional view of No. 10 Neofire

The Ideal No. 10 Neofire incorporates a boiler with a large and readily accessible cleanout cover, and is for Direct Hot Water Supply. The Boiler can be Bower-barffed (Rust-resistant treatment) for Direct Domestic Supply in soft-water districts. It has ample power to provide hot water for domestic purposes when fitted in conjunction with a 20-gallon Direct Cylinder, and in addition will take care of approximately 40 sq. ft. of Radiation, but where this combined duty is required in a soft-water district, the No. 2C Model should be adopted in conjunction with an Indirect Cylinder (see pages 98–99). Where no Radiators are used nor a secondary circulation, a Cylinder of not less than 30 gallons is recommended. The Boiler has $1\frac{1}{4}$ in. flow and return tappings on both sides, but Bower-barffed Boilers are tapped 1 in. as a standard unless $1\frac{1}{4}$ in. are specifically ordered, in which case it is essential to give exact details of the tappings required at the time of order.

This appliance is designed to burn coke, anthracite or coal. (A special heat-resisting steel grate bar can be supplied to order at an extra charge.) It is fitted with a gas ignition burner with cock on left-hand side, but this can be fitted on the right-hand side to special order.

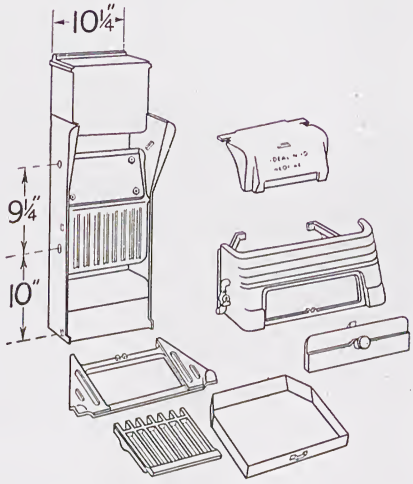
Standard Vitreous Enamel finishes: Cream Mottle; Black; Copper Lustre.

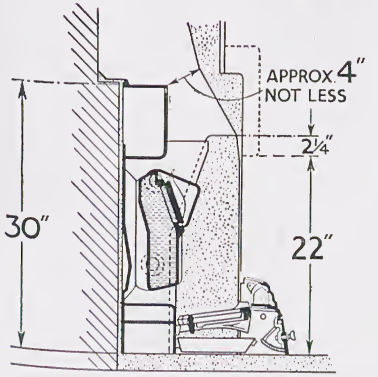
IDEAL NEOFIRE No. 10

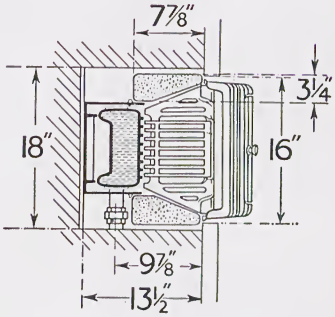
For Heating and Direct Hot Water Supply

Patent applied for

DIMENSIONS IN INCHES







Set of Stoking Tools provided comprising Bent Poker, Flue Brush and Ashpan Lifter.

Jacket and platework vitreous enamelled

Without jacket, showing rocking grate lever in position

No.	B.T.U. per hour	Direct Radiation Sq. ft.	*External Surface B.T.U. per hour	Water Contents Gal.	†Fuel Capacity Cu. ft.
NC31A	23,600	145	2,700	2·9	0·6
NC41A	33,200	205	3,100	3·6	0·9
NC51A	42,800	265	3,500	4·3	1·2
NC61A	52,400	325	3,900	5·0	1·5
NC71A	62,000	385	4,300	5·7	1·8

* *Without Jacket.* † *Available for fuel under working conditions.*

Sheet steel jackets are available as follows:—

Galvanised with black painted top for plain boilers, Vitreous enamelled Grey Mottle or Cream Mottle and Black for enamelled boilers. Jackets supplied with enamelled boilers unless otherwise ordered.

A rocking grate, operated by a detachable lever arm fitted through the clinker door, can be supplied to order.

When automatic regulation is required a No. 802 Ideal Damper Regulator is provided as shown (see page 159).

IDEAL NEO-CLASSIC BOILERS No. 1 SERIES

(Thermostatically Controlled)

For Heating and Indirect Hot Water Supply

Thermostatically Controlled *For Oil-firing*

Nos.			B.T.U. per hour	*Fuel Capacity Cu. ft.	Direct Radiation sq. ft.
Thermostatically Controlled	Manually Controlled	For Oil-firing			
NC-T.4I	NC-M.4I	NC-O.4I	35,000	·78	215
NC-T.5I	NC-M.5I	NC-O.5I	45,000	1·04	285
NC-T.6I	NC-M.6I	NC-O.6I	55,000	1·3	345
NC-T.7I	NC-M.7I	NC-O.7I	65,000	1·56	405

* *Available for fuel under working conditions*

Standard finish : Cream and Black Enamelled Jacket.

Rocking grate incorporating dumping device is a standard component of these boilers (Patent pending No. 7124/54).

Dial-type thermometer on special fitting is provided as standard (2 in. tapping is provided in this fitting).

The jacket door can be reversed.

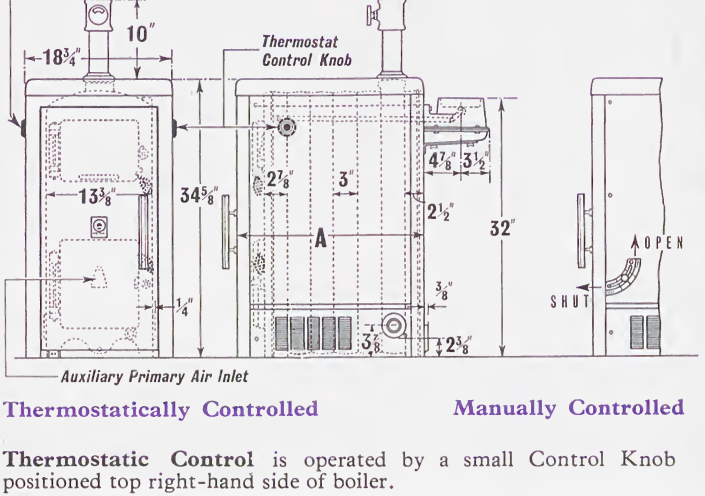
Stoking tools, and Draw-off Cock (page 159) supplied unless otherwise ordered.

This series replaces the No. 1A appearing on page 102.

IDEAL NEO-CLASSIC BOILERS No. 1 SERIES

Thermostatically Controlled: Manually Controlled: For Oil-firing

For Heating and Indirect Hot Water Supply.



Thermostatically Controlled **Manually Controlled**

Thermostatic Control is operated by a small Control Knob positioned top right-hand side of boiler.

Manual Control is by means of a Knob operating through a quadrant positioned bottom right-hand side of boiler.

Oil-firing boiler is supplied without grate bars and ashpit door. Fitted with blank plate (not drilled) for use with oil-burner.

Smokehood complete with damper operated by small Control Knob positioned top left-hand side of boiler. Socket outlet at top for spigot end of 4½ in. cast-iron smokepipe.

DIMENSIONS IN INCHES

Nos.			Number of Sections	Length of Boiler A	No. and size of tappings	
Thermostatically Controlled	Manually Controlled	For Oil-firing			Flow Outlet on Top	*Return at back
NC-T.41	NC-M.41	NC-O.41	4	14¾	1-2	1-2
NC-T.51	NC-M.51	NC-O.51	5	17¾	1-2	1-2
NC-T.61	NC-M.61	NC-O.61	6	20¾	1-2	1-2
NC-T.71	NC-M.71	NC-O.71	7	23¾	1-2	1-2

*A 1½ in. return tapping on either or both sides of intermediate section (next to back section) can be provided to order; distance from floor to centre 3⅞ in.

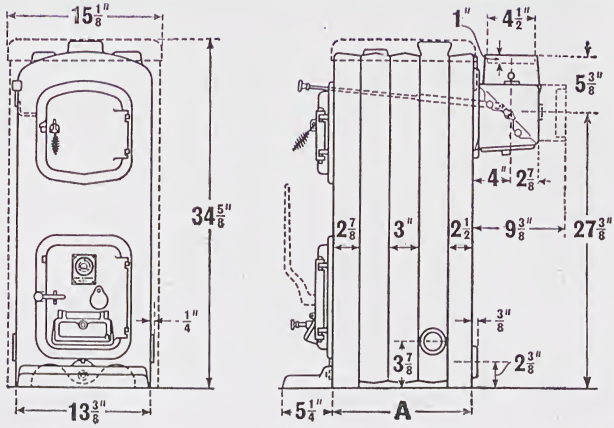
Tapping for ½ in. Draw-Off Cock is provided on face of back section, in addition to a draining plug.

For particulars of smokepipe, elbows etc., see pages 134-136.

This series replaces the No. 1A appearing on page 103.

IDEAL NEO-CLASSIC BOILERS No. 1A SERIES

For Heating and Indirect Hot Water Supply



Smokehood complete with dual damper control, socket outlet at top or back for spigot end of 4½ in. cast-iron smokepipe.

DIMENSIONS IN INCHES

Number of Sections	Heating Surface Sq. ft.	Length of Boiler A	Number and Size of Tappings	
			Flow Outlets on Top	*Return at Back
3	5·5	8 3/8	1-2	1-2
4	7·6	11 3/8	1-2	1-2
5	9·7	14 3/8	1-2	1-2
6	11·8	17 3/8	1-2	1-2
7	13·9	20 3/8	1-2	1-2

*A 1½ in. return tapping on either or both sides of intermediate section can be provided to order: distance from floor to centre 3 7/8 in.

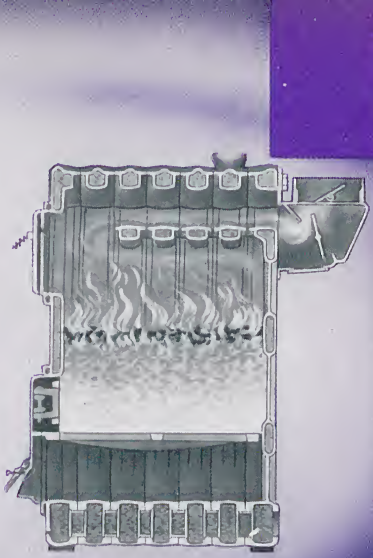
For details of Accessory Tappings, see pages 69–70.

Stoking Tools (page 132) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159).

Grate Bars: Grill pattern unless otherwise ordered.

For particulars of smokepipe, elbows, etc., see pages 134–136.

Jacket and platework vitreous enamelled



Section showing flue travel and waterways

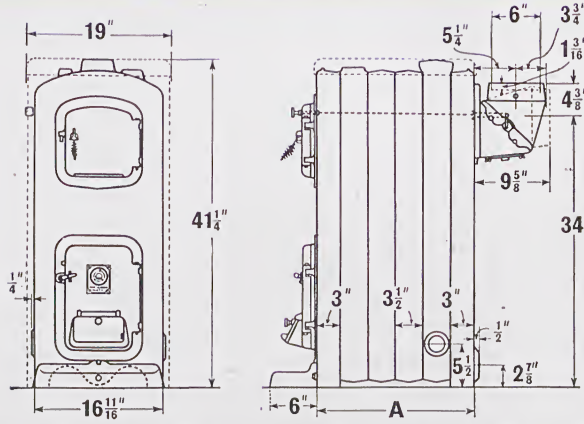
No.	B.T.U. per hour	Direct Radiation Sq. ft.	*External Surface B.T.U. per hour	Water Contents Gal.	†Fuel Capacity Cu. ft.
NC42A	62,000	385	4,500	5·9	1·4
NC52A	76,200	475	5,300	7·0	1·9
NC62A	90,400	565	6,100	8·1	2·4
NC72A	104,600	655	6,900	9·2	2·9
NC82A	118,800	745	7,700	10·3	3·4
NC92A	133,000	835	8,500	11·4	3·9

* *Without Jacket.* † *Available for fuel under working conditions.*

Sheet steel jackets are available as follows:—

Galvanised with black painted top for plain boilers, Vitreous enamelled Grey Mottle or Cream Mottle and Black for enamelled boilers. Jackets supplied with enamelled boilers unless otherwise ordered.

When automatic regulation is required a No. 802 Ideal Damper Regulator is provided as shown (see page 159).



Smokehood complete with dual damper control socket outlet at top or back for spigot end of 6 in. cast-iron smokepipe.

DIMENSIONS IN INCHES

Number of Sections	Heating Surface Sq. ft.	Length of Boiler A	Number and Size of Tappings	
			Flow Outlets on Top	*Return at Back
4	14·0	13	1-2½	1-2½
5	17·2	16½	1-2½	1-2½
6	20·4	20	1-2½	1-2½
7	23·6	23½	1-2½	1-2½
8	26·8	27	1-2½	1-2½
9	30·1	30½	1-2½	1-2½

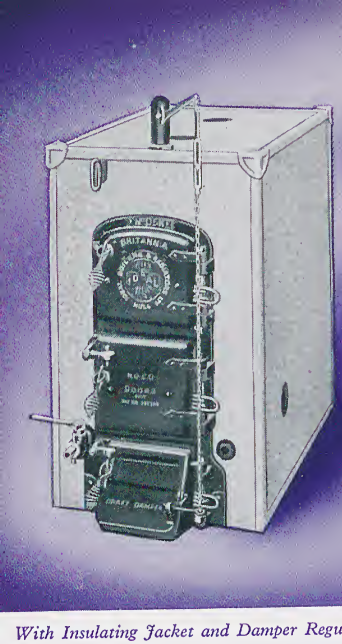
* A 2 in. return tapping on either or both sides of intermediate section can be provided to order. Distance from floor to centre, 5½ in.

For details of Accessory Tappings, see pages 69–70.

Stoking Tools (page 132) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159).

Grate Bars: Grill pattern.

For particulars of smokepipe, elbows, etc., see pages 134–136.



With Insulating Jacket and Damper Regulator

With Front Smokehood, without Jacket

No.	B.T.U. per hour	Direct Radiation Sq. ft.	Lineal Feet of 4 in. pipe	Water Contents Gal.	*Fuel Capacity Cu. ft.
03K	40,000	245	215	7·1	1·4
04K	51,000	315	275	8·8	2·1
05K	62,000	385	335	10·5	2·8
06K	73,000	455	395	12·2	3·5
07K	84,000	525	455	13·9	4·2

* *Available for fuel under working conditions.*

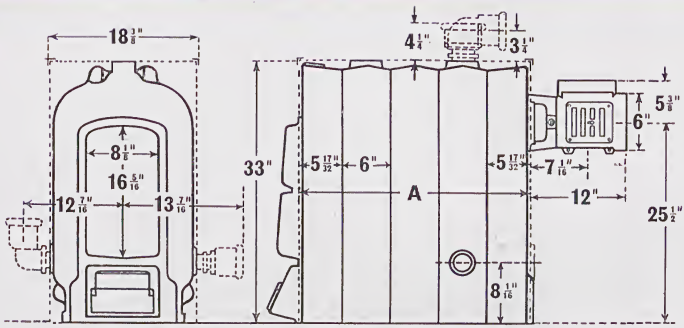
Insulating Galvanised Steel Jackets are available as an extra; when ordering state position of connections.

Jackets and doors can be supplied in vitreous enamel finish.

When automatic regulation is required, No. 802 Ideal Damper Regulator is provided as shown (see page 159); when not required a sliding ashpit door can be supplied, if desired, in place of the hinged pattern illustrated.

Stoking Tools (pages 132–133) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159). Grate Bars: Grill pattern.

Boilers for Mechanical Stoking & Oil Burning, pages 124–131.



Smokehood with Socket Outlet at back, top or side for spigot end of 6 in. cast-iron smokepipe, fitted with checkdraught damper and cleaning door. When fitted with Smokehood at front, the height from floor to top of smoke outlet is 36⅞ inches.

DIMENSIONS IN INCHES

No.	Number of Sections	Heating Surface Sq. ft.	Length of Boiler A	Number and Size of Tappings	
				Flow Outlets at Top	Returns at Bottom either side
03K	3	9·0	17 1/16	1-2	1-2
04K	4	11·5	23 1/16	1-2	1-2
05K	5	14·0	29 1/16	2-2	2-2
06K	6	16·5	35 1/16	2-2	2-2
07K	7	19·0	41 1/16	2-2	2-2

Jackets can be fitted after pipe connections have been made.

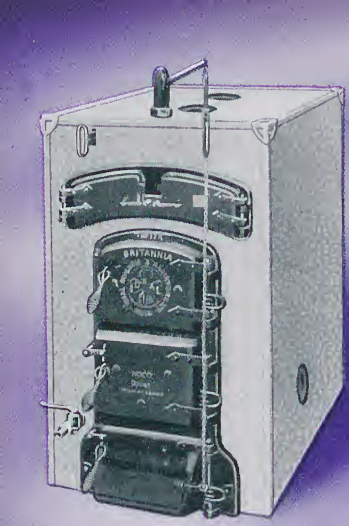
No. o-K Series.—A 2½ in. return tapping on face of back section can be supplied. Height from floor to centre, 8½ in.

No. o-KF Series (Front Smokehood).—2½ in. flow and return tappings on face of back section can be supplied to special order. Height from floor to centre of flow 30 in., return 8½ in. No extra charge is made if supplied in place of the connections shown above.

Intermediate sections of these boilers can be supplied with return tappings on each side. Extra middle sections for enlarging Boilers, with necessary nipples, etc., can be supplied. Jacket extension pieces also available when required.

For details of Accessory Tappings, see pages 69–70; Foundation and Ashpit dimensions (pages 72–73); Boiler fittings and Connections (page 138); Smokepipe and Elbows (pages 134–136).

When ordering boilers with smokehood at front, add the letter F to Fig. No., thus: 03KF, 04KF, etc.



With Insulating Jacket and Damper Regulator

With Front Smokehood, without Jacket

No.	B.T.U. per hour	Direct Radiation Sq. ft.	Lineal ft. of 4-in. pipe	Water Contents Gal.	*Fuel Capacity Cu. ft.
14K	93,000	580	500	14·4	2·6
15K	117,000	730	630	17·6	3·5
16K	141,000	880	760	20·8	4·4
17K	165,000	1030	890	24·0	5·3
18K	189,000	1180	1020	27·2	6·2

* *Available for fuel under working conditions.*

Insulating Galvanised Steel Jackets are available as an extra; when ordering, state position of connections.

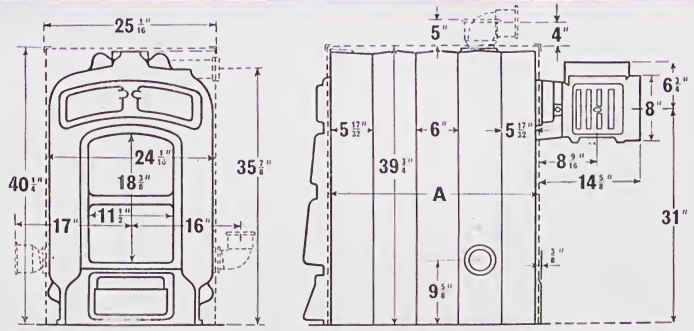
Jackets and doors can be supplied in vitreous enamel finish.

When automatic regulation is required, No. 802 Ideal Damper Regulator is provided as shown (page 159); when not required a sliding ashpit door can be supplied, if desired, in place of the hinged pattern illustrated.

Stoking Tools (pages 132–133) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159). Grate Bars: Grill pattern. For details of Accessory Tappings, see pages 69–70. Foundation and Ashpit dimensions (pages 72–73); Boiler fittings and Connections (page 138); Smokepipe and Elbows (pages 134–135).

IDEAL BRITANNIA BOILERS No. 1-K & 1-KF

For Water. Hand Firing. SERIES



Smokehood with Socket Outlet at back, top or side for spigot end of 8 in. cast-iron smokepipe, fitted with checkdraught damper and cleaning door. When fitted with smokehood at front, the height from floor to top of smoke outlet is 40¾ in.

DIMENSIONS IN INCHES

No.	Number of Sections	Heating Surface Sq. ft.	Length of Boiler A	Number and Size of Tappings	
				Flow Outlets at Top	Returns at Bottom either side
14K	4	21·0	23 1/16	1-3	1-3
15K	5	26·5	29 1/16	1-3	1-3
16K	6	32·0	35 1/16	1-3	1-3
17K	7	37·5	41 1/16	2-3	2-3
18K	8	43·0	47 1/16	2-3	2-3

Jackets can be fitted after pipe connections have been made.

No. 1-K Series—A 4 in. flanged return connection on face of back section can be supplied. Height from floor to centre, 10 1/16 in.

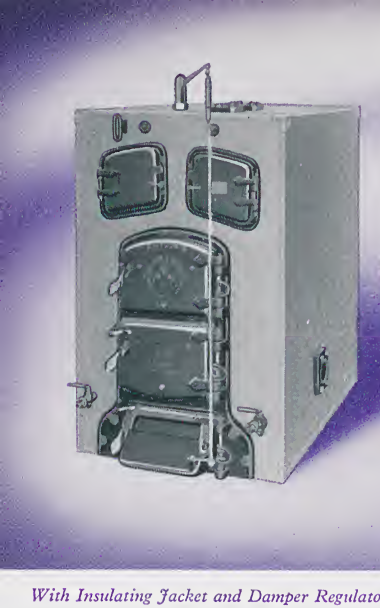
No. 1-KF Series (Front Smokehood)—4 in. flanged flow and return openings on face of back centre can be supplied. Height from floor to centre of flow 36½ in., return 10 1/16 in. No extra charge is made if supplied in place of the connections shown above.

Extra middle sections for enlarging Boilers, with necessary nipples, etc., and Jacket extension pieces can be supplied.

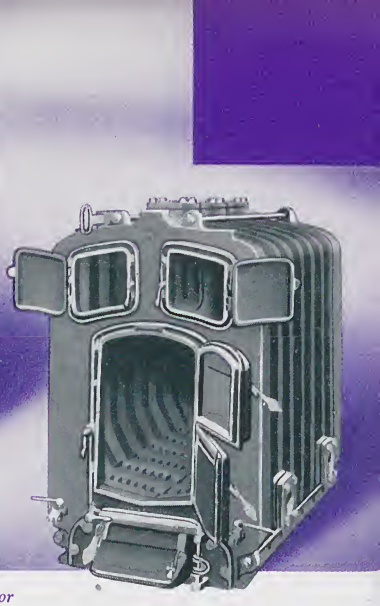
Intermediate sections of boilers can be supplied with return tappings on each side. A special intermediate section can be supplied with a 3 in. screwed tapping on shoulder for horizontal flow connection. Height from floor to centre, 35⅞ in.; see diagram above.

When ordering boilers with smokehood at front, add the letters F to Fig. No., thus: 14KF, 15KF, etc.

Boilers for Mechanical Stoking & Oil Burning, pages 124–131.



With Insulating Jacket and Damper Regulator



Without Jacket

No.	B.T.U. per hour	Direct Radiation Sq. ft.	Lineal feet of 4 in. pipe	Water Capacity Gal.	*Fuel Capacity Cu. ft.
24K	159,000	995	860	25·0	4·0
25K	200,000	1,250	1,080	30·6	5·4
26K	241,000	1,505	1,300	36·2	6·8
27K	282,000	1,760	1,520	41·8	8·2
28K	323,000	2,015	1,740	47·4	9·6
29K	364,000	2,270	1,960	53·0	11·0

* *Available for fuel under working conditions.*

Insulating Galvanised Steel Jackets are available as an extra; when ordering, state position of connections.

Jackets and doors can be supplied in vitreous enamel finish.

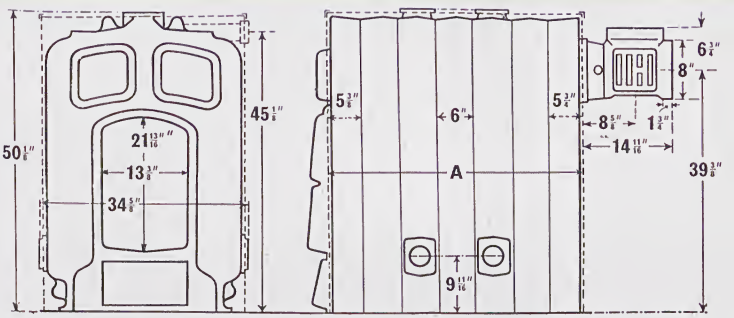
When automatic regulation is required, No. 802 Ideal Damper Regulator is provided as shown (see page 159); when not required a sliding ashpit door can be supplied, if desired, in place of the hinged pattern illustrated.

Stoking Tools (pages 132–133) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159). Grate Bars: Water cooled. Grill pattern can be supplied.

Boilers for Mechanical Stoking and Oil Burning, see pages 124–131.

IDEAL BRITANNIA BOILERS No. 2-K SERIES

For Water. Hand Firing.



Smokehood with Socket Outlet at back, top or side for spigot end of 8 in. cast-iron smokepipe, fitted with checkdraught damper and cleaning door.

DIMENSIONS IN INCHES

No.	Number of Sections	Heating Surface Sq. ft.	Length of Boiler A	Number & Size of Flanged Connectio	
				Flow Outlets at Top	Returns at Bottom either side
24K	4	35·5	23 1/8	2-4	2-4
25K	5	45·0	29 1/8	2-4	2-4
26K	6	54·5	35 1/8	2-4	2-4
27K	7	64·0	41 1/8	3-4	3-4
28K	8	73·5	47 1/8	3-4	3-4
29K	9	83·0	53 1/8	3-4	3-4

For recommended flow connections, see page 68.

Jackets can be fitted after pipe connections have been made.

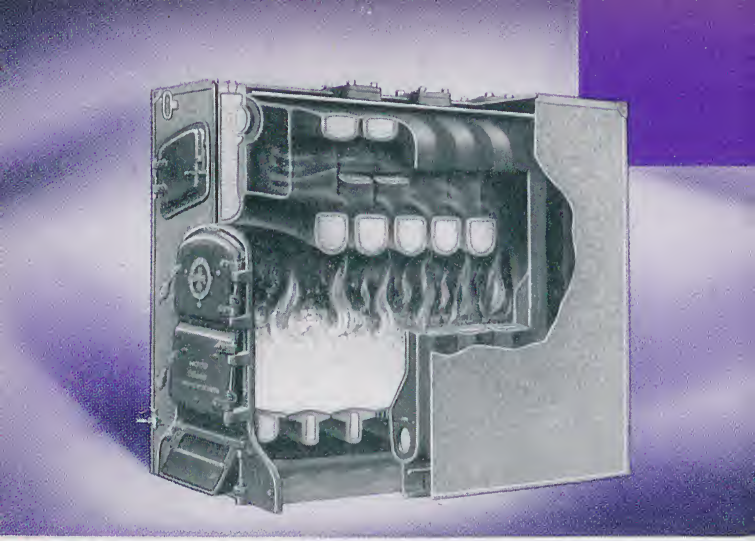
On special order, two 3 in. flanged return connections on face of back section can be provided. Height from floor to centre, 8 7/16 in.; centre to centre, 24 5/8 in.

Extra middle sections for enlarging Boilers, with necessary nipples, etc., and Jacket extension pieces can be supplied.

Intermediate sections can be supplied with flanged return connection on each side; for flanged socket connection (see page 139).

A special intermediate section can be supplied, with a 3 in. tapped flange on shoulder for horizontal flow connection. Height from floor to centre, 45 1/8 in.; see diagram above.

For details of Accessory Tappings, see pages 69–70; Foundation and Ashpit dimensions (pages 72–73); Boiler Fittings and Connections (pages 136–139); Smokepipe and Elbows (pages 134–135).



Sectional view showing flue travel and waterways with jacket

No.	B.T.U. per hour	Direct Radiation Sq. ft.	Lineal ft. of 4 in. pipe	Water Capacity Gal.	*Fuel Capacity Cu. ft.
35K	313,000	1,950	1,695	67·4	9·1
36K	379,000	2,365	2,050	79·8	11·5
37K	445,000	2,780	2,405	92·1	13·8
38K	511,000	3,195	2,760	104·5	16·2
39K	577,000	3,610	3,115	116·8	18·6
310K	643,000	4,025	3,470	129·2	21·0
311K	709,000	4,440	3,825	141·6	23·4

* *Available for fuel under working conditions.*

Insulating Galvanised Steel Jackets are available as an extra; when ordering state position of connections.

Jackets and doors can be supplied in vitreous enamel finish.

When automatic regulation is required, No. 802 Ideal Damper Regulator is provided as shown (see page 159); when not required a sliding ashpit door can be supplied, if desired, in place of the hinged pattern illustrated.

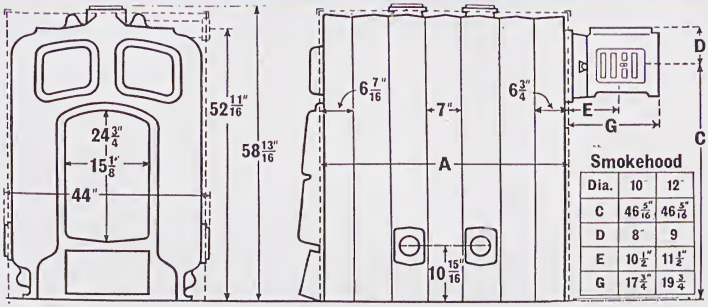
Stoking Tools (pages 132–133) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 134–139). Grate Bars: Water cooled. Grill pattern can be supplied.

For details of Accessory Tappings, see pages 69–70; Foundation and Ashpit dimensions (pages 72–73); Boiler Fittings and Connections (pages 136–139); Smokepipe and Elbows (pages 134–135).

Boilers for Mechanical Stoking and Oil Burning, see pages 124–131.

IDEAL BRITANNIA BOILERS No. 3-K SERIES

For Water. Hand Firing.



Smokehood

Dia.	10"	12"
C	46 5/16"	46 5/16"
D	8"	9"
E	10 1/2"	11 1/2"
G	17 1/4"	19 3/4"

Diam. of Smoke Outlet: Nos. 35–38K, 10 in.; Nos. 39–311K, 12 in.

Smokehood with Socket Outlet at back, top or side for spigot end of smokepipe, fitted with checkdraught damper and cleaning door.

DIMENSIONS IN INCHES

No.	Number of Sections	Heating Surface Sq. ft.	Length of Boiler A	Number & Size of Flanged Connecti	
				Flow Outlets at Top	Returns at Bottom either side
35K	5	70·5	34 3/16	2-4	2-4
36K	6	85·5	41 3/16	2-4	2-4
37K	7	100·5	48 3/16	2-4	2-4
38K	8	115·5	55 3/16	3-4	3-4
39K	9	130·5	62 3/16	3-4	3-4
310K	10	145·5	69 3/16	3-4	3-4
311K	11	160·5	76 3/16	3-4	3-4

For recommended flow connections, see page 68.

Jackets can be fitted after pipe connections have been made.

5 in. flanged flow and return connections can be supplied in place of the above.

On special order, two 4 in. flanged return connections on face of back section can be provided. Height from floor to centre, 9 3/8 in.; centre to centre, 33 in. These openings can also be provided to enable two or more boilers to be connected in battery form. For batteries of two or more boilers of the same size, a single jacket can be supplied; distance from centre to centre of boilers, 41 3/4 in.

A special intermediate section can be supplied, with a 4 in. tapped flange on shoulder for horizontal flow connection. Height from floor to centre, 52 11/16 in.; see diagram above and page 139.

Intermediate sections can be furnished with flanged return connection on each side; for flanged socket connections, see page 139.

Without Jacket

No.	B.T.U. per hour	Direct Radiation Sq. ft.	Lineal ft. of 4 in. Pipe	Water Contents Gal.	*Fuel Capacity Cu. ft.
47K	625,000	3,905	3,370	138·6	17·4
48K	718,000	4,485	3,875	157·2	20·4
49K	811,000	5,065	4,380	175·9	23·4
410K	904,000	5,645	4,885	194·6	26·4
411K	997,000	6,225	5,390	213·3	29·4
412K	1,090,000	6,805	5,895	232·0	32·4
413K	1,183,000	7,385	6,400	250·6	35·4
414K	1,276,000	7,965	6,905	269·2	38·4

* *Available for fuel under working conditions.*

Insulating Galvanised Steel Jackets are available as an extra; when ordering, state position of connections.

Jackets and doors can be supplied in vitreous enamel finish.

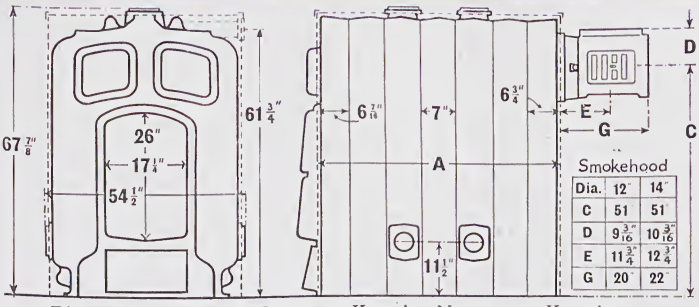
When automatic regulation is required, No. 802 Ideal Damper Regulator is provided as shown (see page 159); when not required a sliding ashpit door can be supplied, if desired, in place of the hinged pattern illustrated.

Stoking Tools (pages 132–133) and Draw-off Cock (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159). Grate Bars: Water cooled. Grill pattern can be supplied.

For details of Accessory Tappings, see pages 69–70; Foundation and Ashpit dimensions (pages 72–73); Boiler Fittings and Connections (pages 136–139); Smokepipe and Elbows (pages 134–135). **Boilers for Mechanical Stoking and Oil Burning, see pages 124–131.**

IDEAL BRITANNIA BOILERS No. 4-K SERIES

For Water. Hand Firing.



Diam. of Smoke Outlet: Nos. 47–411K, 12 in.; Nos. 412–414K, 14 in.

Smokehood with Socket Outlet at back, top or side for spigot end of smokepipe, fitted with checkdraught damper and cleaning door.

DIMENSIONS IN INCHES

No.	Number of Sections	Heating Surface Sq. ft.	Length of Boiler A	Number & Size of Flanged Connections	
				Flow Outlets at Top	Returns at Bottom either side
47K	7	141	48 3/16	2-4	2-4
48K	8	162	55 3/16	2-4	2-4
49K	9	183	62 3/16	3-4	3-4
410K	10	204	69 3/16	3-4	3-4
411K	11	225	76 3/16	4-4	4-4
412K	12	246	83 3/16	4-4	4-4
413K	13	267	90 3/16	4-4	4-4
414K	14	288	97 3/16	4-4	4-4

For recommended flow connections, see page 68.

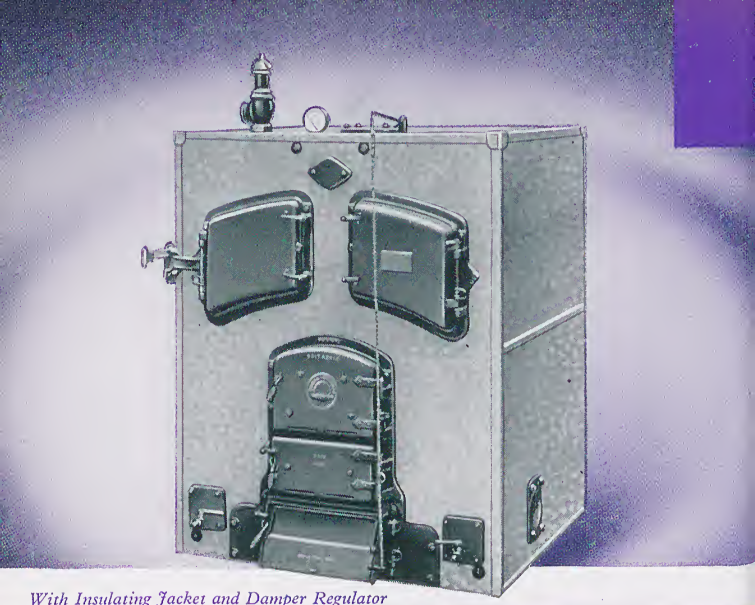
Jackets can be fitted after pipe connections have been made.

5 in. and 6 in. flanged flow and return connections can be supplied in place of the above. For 6 in. connections, an adapter is used, increasing height or width of boiler 4 in.

On special order, two 4 in. flanged return connections on face of back section can be provided. Height from floor to centre 9 7/8 in.; centre to centre, 43 1/4 in. These openings can also be provided to enable two or more boilers to be connected in battery form. For batteries of two or more boilers of the same size, a single jacket can be supplied; distance from centre to centre of boilers, 52 1/4 in.

A special intermediate section can be supplied, with a 4 in. tapped flange on shoulder for horizontal flow connection. Height from floor to centre, 61 3/4 in.; see diagram above and page 139.

Intermediate sections can be furnished with flanged return connections on each side; for flanged socket connections, see page 139.



With Insulating Jacket and Damper Regulator

No.	B.T.U. per hour	Direct Radiation Sq. ft.	Lineal ft. of 4 in. Pipe	Water Contents Gal.	Fuel Capacity *Cu. ft.
57K	1,132,000	7095	6020	169	28·8
58K	1,302,000	8155	6920	191	33·7
59K	1,472,000	9215	7820	213	38·6
510K	1,642,000	10275	8720	235	43·5
511K	1,812,000	11335	9620	257	48·4
512K	1,982,000	12395	10520	279	53·3
513K	2,152,000	13455	11420	301	58·2

* *Available for fuel under working conditions.*

Insulating Galvanised Steel Jackets are available as an extra; when ordering, state position of connections.

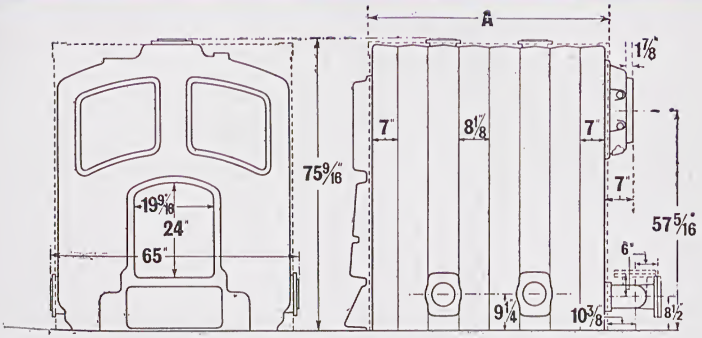
When automatic regulation is required, No. 802 Ideal Damper Regulator is provided as shown (see page 159).

Stoking Tools (pages 132–133) and Draw-off Cocks (page 159) supplied unless otherwise ordered. All Accessories extra (pages 154–159). Grate Bars: Grill pattern only.

For details of Accessory Tappings, see pages 69–70; Foundation and Ashpit dimensions (pages 72–73); Boiler Fittings and Connections (pages 136–139); Smokepipe and Elbows (pages 134–136).

IDEAL BRITANNIA BOILERS No. 5-K SERIES

For Water. Hand Firing.



Smokehood complete with dual damper control and clean-out cover; outlet suitable for smokepipe of the respective size: 7 to 9 sections, 14 in.; 10 to 13 sections, 16 in.

DIMENSIONS IN INCHES

No.	Number of Sections	Length of Boiler A	Number & Size of Flanged Connections	
			Flow Outlets at Top	Returns at Bottom either side
57K	7	55⅝	2—6	2—6
58K	8	63¾	2—6	2—6
59K	9	71⅞	2—6	2—6
510K	10	80	3—6	3—6
511K	11	88⅛	3—6	3—6
512K	12	96¼	4—6	4—6
513K	13	104⅜	4—6	4—6

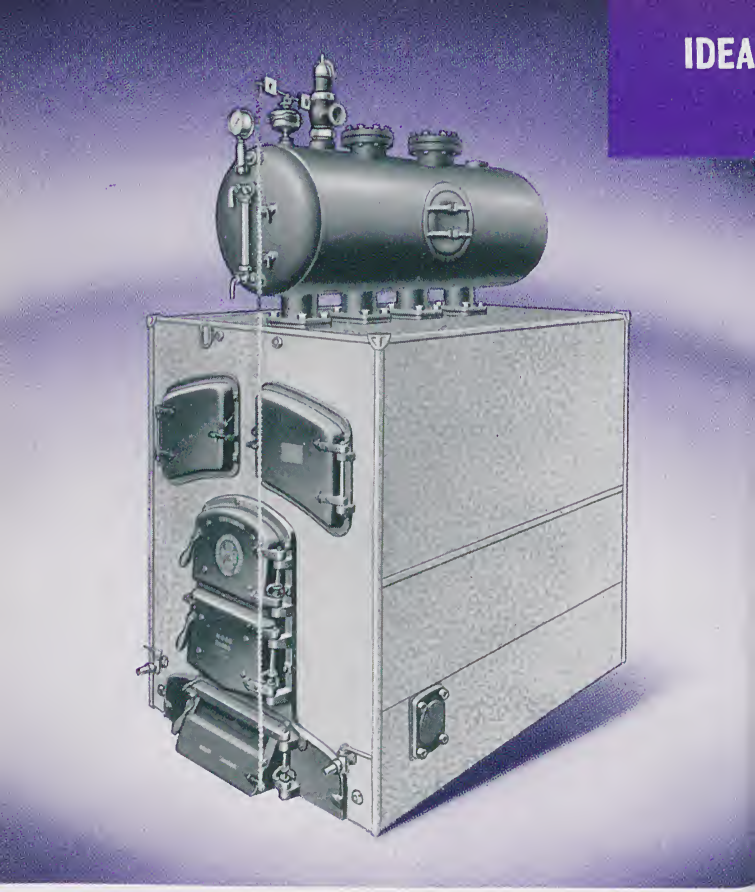
For recommended flow connections, see page 68.

Jackets can be fitted after pipe connections have been made.

No waterway is provided at grate bar level in front section. Return Header on face of back section must therefore be fitted. When side returns are specified, the Header is sent with a blank flange. No. 346 Header with horizontal outlet, supplied as standard. No. 336 Header with vertical outlet supplied to special order (see pages 136–137).

For batteries of two or more boilers of the same size, a single jacket can be supplied; distance from centre to centre of boilers, 63¾ in.

Boilers for Mechanical Stoking and Oil Burning, see pages 124–131.



For Hand-firing, Mechanical Stoking and Oil Burning

For details of platework, etc., supplied with boilers for Mechanical Stoking and Oil Burning, see pages 124 to 131. See also page 71, "Steam Boilers."

Grate Bars: Water cooled. Grill pattern can be supplied. (5K Series—Grill Pattern only).

Stoking Tools: Supplied unless otherwise ordered (see pages 132 and 133 as for Hot Water Boilers).

Steam Mountings: Supplied unless otherwise ordered.

Jackets: When ordering Jackets state position of return tappings.

BRITANNIA BOILERS No. 2,3,4,& 5-K SERIES

For Low Pressure Steam up to 15 lb./sq. in.

CAPACITIES

2-K SERIES

*No.	Heating Surface Sq. ft.	Ratings B.T.U. per hour	Ratings Direct Radiation (Sq. ft. steam)
250K	45·0	200,000	780
260K	54·5	241,000	940
270K	64·0	282,000	1,100
280K	73·5	323,000	1,260
290K	83·0	364,000	1,420
†2100	92·5	405,000	1,585
†2110	102·0	446,000	1,745
†2120	111·5	487,000	1,905

3-K SERIES

*No.	Heating Surface Sq. ft.	Ratings B.T.U. per hour	Ratings Direct Radiation Sq. ft. (steam)
350K	70·5	313,000	1,225
360K	85·5	379,000	1,480
370K	100·5	445,000	1,740
380K	115·5	511,000	1,995
390K	130·5	577,000	2,255
3100K	145·5	643,000	2,510
3110K	160·5	709,000	2,770
†3120	175·5	775,000	3,030
†3130	190·5	841,000	3,290

4-K SERIES

*No.	Heating Surface Sq. ft.	Ratings B.T.U. per hour	Ratings Direct Radiation Sq. ft. (steam)
470K	141	625,000	2,440
480K	162	718,000	2,805
490K	183	811,000	3,170
4100K	204	904,000	3,530
4110K	225	997,000	3,895
4120K	246	1,090,000	4,260
4130K	267	1,183,000	4,620
4140K	288	1,276,000	4,985
†4150	309	1,369,000	5,350
†4160	330	1,462,000	5,710

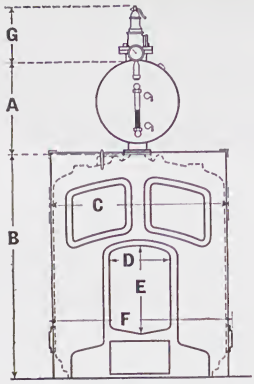
5-K SERIES

*No.	Heating Surface Sq. ft.	Ratings B.T.U. per hour	Ratings Direct Radiation Sq. ft. (steam)
570K	—	1,132,000	4,420
580K	—	1,302,000	5,085
590K	—	1,472,000	5,750
5100K	—	1,642,000	6,415
5110K	—	1,812,000	7,080
5120K	—	1,982,000	7,740
5130K	—	2,152,000	8,405
†5140	—	2,322,000	9,070
†5150	—	2,492,000	9,735

* **The letter K in Fig. No. denotes Hand-firing. For Mechanical Stoking or Oil Burning specify KS or KO respectively, thus: 390KS and 390KO, etc.; allowance will be made for omission of grate bars from these boilers.**

† For mechanical stoking or oil burning only. See page 133 regarding Stoking Tools. Jackets can be fitted after pipe connections have been made. Jackets and doors can be supplied in Vitreous Enamel finish. (Except No. 5K Boilers.)

Steam Mountings: Steam gauge (with syphon bottle); Water gauge; "Ar" Spring safety valve (Two with Nos. 4130K to 4160 and 580K to 5150 inclusive); No. 905 Automatic damper regulator; Draw-off Cocks (No. 2 Series, two ¾ in.; Nos. 3, 4 and 5 Series, two 1 in.); two water-gauge test cocks. Allowance will be made for omission of damper regulator in the case of boilers for mechanical stoking or oil burning. For further details see pages 156 to 159.



DIMENSIONS IN INCHES

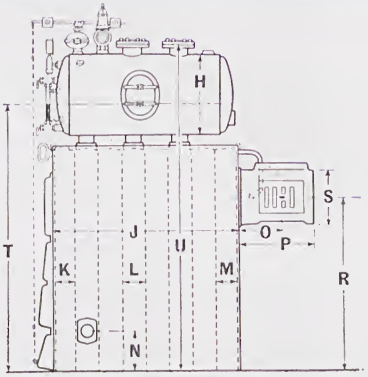
No.	Capacities Water Gal.	Capacities ‡ Fuel Cu. ft.	*Flanged Connections on Steam Drum No. and Diameter	A	B	C	D	E	F	G
250K	40·8	5·4	1—3	$23\frac{5}{8}$	$48\frac{7}{8}$	$33\frac{1}{4}$	$13\frac{3}{8}$	$21\frac{13}{16}$	$34\frac{5}{8}$	$10\frac{1}{4}$
260K	48·8	6·8	1—4							$10\frac{1}{4}$
270K	56·9	8·2	1—4							$11\frac{1}{4}$
280K	64·9	9·6	2—3							$11\frac{1}{4}$
290K	73·1	11·0	2—3							$11\frac{1}{4}$
†2100	81·1	—	3—3							$13\frac{1}{4}$
†2110	89·1	—	3—3							$13\frac{1}{4}$
†2120	97·1	—	3—3							$13\frac{1}{4}$
350K	82·7	9·1	1—4	$25\frac{5}{8}$	$57\frac{11}{16}$	$42\frac{1}{2}$	$15\frac{1}{8}$	$24\frac{3}{4}$	44	$11\frac{1}{4}$
360K	98·6	11·5	1—4							$11\frac{1}{4}$
370K	114·5	13·8	2—4							$13\frac{1}{4}$
380K	130·4	16·2	2—4							$13\frac{1}{4}$
390K	146·3	18·6	2—4							$13\frac{1}{4}$
3100K	162·3	21·0	3—4							$13\frac{1}{4}$
3110K	178·2	23·4	3—4							$15\frac{1}{4}$
†3120	194·1	—	3—4							$15\frac{1}{4}$
†3130	210·1	—	3—4							$15\frac{1}{4}$

* It is recommended that full area of steam connections be utilised. If installation necessitates circulating pipes, provision for these will be made on steam drum and boiler without extra charge. Positions should be indicated at time of ordering. Return connections as for standard Britannia boilers for water.

† *For mechanical stoking or oil burning only.*
‡ *Available for fuel under working conditions.*

BRITANNIA BOILER DIMENSIONS No. 2 & 3-K SERIES

For Low Pressure Steam up to 15 lb./sq. in.



Smokehood with Socket Outlet at back, top or side for spigot end of smokepipe; fitted with checkdraught damper and cleaning door.

DIMENSIONS IN INCHES

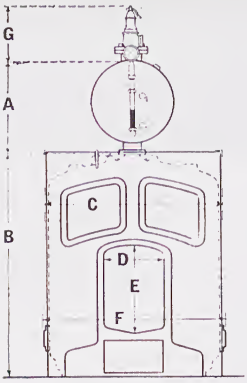
No.	H	J	K	L	M	N	O	P	R	S	T	U
250K	$20\frac{1}{2}$	$29\frac{1}{8}$	$5\frac{3}{8}$	6	$5\frac{3}{4}$	$9\frac{11}{16}$	$8\frac{5}{8}$	$14\frac{11}{16}$	$39\frac{3}{8}$	8	$59\frac{7}{8}$	$75\frac{1}{2}$
260K		$35\frac{1}{8}$										
270K		$41\frac{1}{8}$										
280K		$47\frac{1}{8}$										
290K		$53\frac{1}{8}$										
2100		$59\frac{1}{8}$										
2110		$65\frac{1}{8}$										
2120		$71\frac{1}{8}$										
350K	$22\frac{1}{2}$	$34\frac{3}{16}$	$6\frac{7}{16}$	7	$6\frac{3}{4}$	$10\frac{15}{16}$	$10\frac{1}{2}$	$17\frac{3}{4}$	$46\frac{5}{16}$	10	$69\frac{3}{4}$	$86\frac{3}{8}$
360K		$41\frac{3}{16}$					$10\frac{1}{2}$	$17\frac{3}{4}$		10		
370K		$48\frac{3}{16}$					$10\frac{1}{2}$	$17\frac{3}{4}$		10		
380K		$55\frac{3}{16}$					$10\frac{1}{2}$	$17\frac{3}{4}$		10		
390K		$62\frac{3}{16}$					$11\frac{1}{2}$	$19\frac{3}{4}$		12		
3100K		$69\frac{3}{16}$					$11\frac{1}{2}$	$19\frac{3}{4}$		12		
3110K		$76\frac{3}{16}$					$11\frac{1}{2}$	$19\frac{3}{4}$		12		
3120		$83\frac{3}{16}$					$11\frac{1}{2}$	$19\frac{3}{4}$		12		
3130		$90\frac{3}{16}$					$11\frac{1}{2}$	$19\frac{3}{4}$		12		

For Foundation and Ashpit Dimensions, see pages 72–73.

Intermediate sections can be furnished with flanged return connections on each side.

For Boiler Fittings and Connections, see pages 136–139.

Table continued overleaf



DIMENSIONS IN INCHES

No.	Capacities		*Flanged Connections on Steam Drum	A	B	C	D	E	F	G
	Water	‡ Fuel	No. and Diameter							
	Gal.	Cu. ft.								
470K	169·6	17·4	2—4	$27\frac{3}{8}$	$66\frac{3}{4}$	$53\frac{1}{8}$	$17\frac{1}{4}$	26	$54\frac{5}{8}$	$13\frac{1}{4}$
480K	193·2	20·4	2—5							$15\frac{1}{4}$
490K	216·9	23·4	2—5							$15\frac{1}{4}$
4100K	240·5	26·4	2—5							$15\frac{1}{4}$
4110K	264·2	29·4	3—5							$15\frac{1}{4}$
4120K	287·9	32·4	3—5							$15\frac{1}{4}$
4130K	311·5	35·4	3—5							$13\frac{1}{4}$
4140K	335·1	38·4	3—5							$13\frac{1}{4}$
†4150	358·7	—	4—5							$13\frac{1}{4}$
†4160	382·3	—	4—5							$13\frac{1}{4}$
570K	228	28·8	1—6	$33\frac{3}{8}$	$74\frac{1}{4}$	$63\frac{1}{4}$	$19\frac{9}{16}$	24	65	$15\frac{1}{4}$
580K	260·5	33·7	1—6							$13\frac{1}{4}$
590K	293	38·6	2—6							$13\frac{1}{4}$
5100K	325·5	43·5	2—6							$15\frac{1}{4}$
5110K	358	48·4	3—6							$15\frac{1}{4}$
5120K	390·5	53·3	3—6							$15\frac{1}{4}$
5130K	423	58·2	3—6							$15\frac{1}{4}$
†5140	455·5	63·1	3—6							$15\frac{1}{4}$
†5150	488	68·0	4—6							$15\frac{1}{4}$

* It is recommended that full area of steam connections be utilised. If installation necessitates circulating pipes, provision for these will be made on steam drum and boiler without extra charge. Positions should be indicated at time of ordering. Return connections as for standard Britannia boilers for water.

† For mechanical stoking or oil burning only.
‡ Available for fuel under working conditions.

BRITANNIA BOILER DIMENSIONS No. 4 & 5-K SERIES

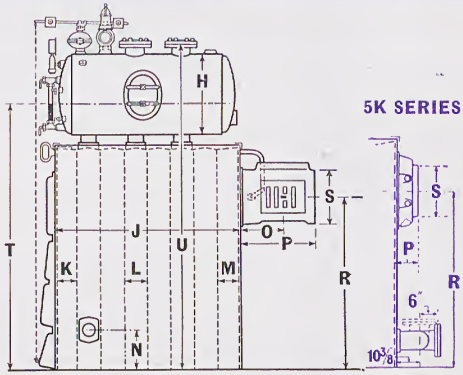
For Low Pressure Steam up to 15 lb./sq. in.

No. 4K Series; Smokehood with socket outlet at back, top or side for spigot end of smokepipe; fitted with check-draught damper and cleaning door.

No. 5K Series; Smokehood complete with dual damper control and clean-out cover, outlet suitable for spigot end of smokepipe.

Minimum internal dia. of socket outlets for smokepipe:—

14 in. — 15 7/16 in.
16 in. — 17 11/16 in.
18 in. — 19 13/16 in.



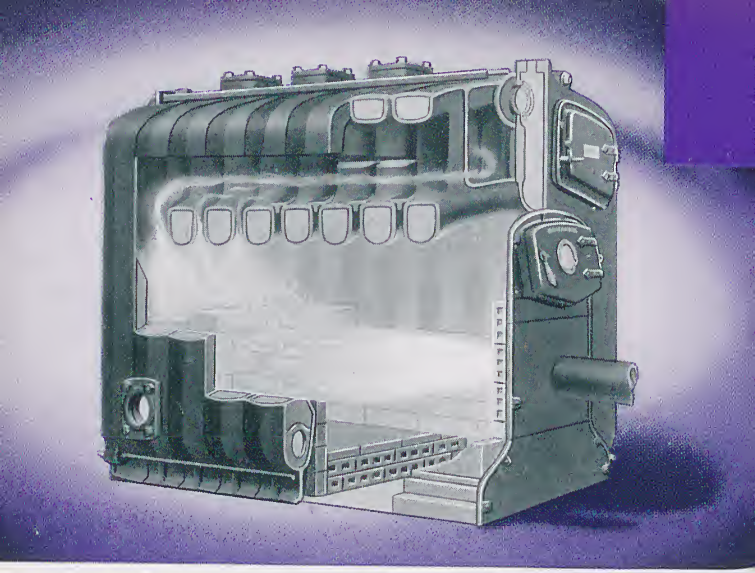
DIMENSIONS IN INCHES

No.	H	J	K	L	M	N	O	P	R	S	T	U
470K	24½	48 3/16	6 7/16	7	6¾	11½	11¾	20	51	12	79½	97⅛
480K		55 3/16					11¾	20		12		
490K		62 3/16					11¾	20		12		
4100K		69 3/16					11¾	20		12		
4110K		76 3/16					11¾	20		12		
4120K		83 3/16					12¾	22		14		
4130K		90 3/16					12¾	22		14		
4140K		97 3/16					12¾	22		14		
4150		104 3/16					12¾	22		14		
4160		111 3/16					12¾	22		14		
570K	30½	54 5/8	7	8⅛	7	9¼	—	7	57 5/16	14	91 7/16	110⅝
580K		62¾					—			14		
590K		70 7/8					—			14		
5100K		79					—			16		
5110K		87⅛					—			16		
5120K		95¼					—			16		
5130K		103⅜					—			16		
5140		111½					—			18		
5150		119⅝					—			18		

For Foundation and Ashpit Dimensions, see pages 72–73.

Intermediate sections can be furnished with flanged return connections on each side.

For Boiler Fittings and Connections, see pages 136–139.



Sectional view showing flue travel

Ideal Britannia Boilers are admirably suited for mechanical stoking or oil burning, satisfactory results being obtained both under test and in actual performance with well-known types of each apparatus.

The fire chamber is of sufficient volume for efficient combustion and only a minimum of refractory brickwork is required. The boiler sections have ground beaded edges, making the combustion chamber and flues smoketight without the use of putty or other filling. The flue travel, lengthened by special baffles, ensures effective absorption of heat with reasonably small chimney loss; the operating efficiencies are therefore very satisfactory. The large flue doors provide easy access for cleaning.

A locking device for fixing smokepipe damper in smokehood in any desired position is supplied in place of the usual damper-operating lever.

Oil Burning. The illustration shows a No. 3-KO Series Britannia Boiler with firebrick lining as required for a jet type burner. An unrestricted space for entry of the burner nozzle is provided by casting the intermediate sections without the regular water-cooled grate, and the front section without the circulating waterway between the ashpit and firedoors. The back section is therefore provided with flanged openings and a header supplied—see page 137. An observation door fitted with a Pyrex glass window and solid blank plates are supplied in place of the usual ashpit and firedoors, as illustrated. If required, a sliding ashpit door is available.

Mechanical Stoking. Boilers for mechanical stoking are supplied as standard with "K" type front section and Noco firedoors as for hand-firing, with the exception that the intermediate sections are cast without the regular water-cooled grate. A plain cast-iron panel which can be suitably cut, for application of the stoker, is provided to cover the ashpit opening. The large Noco firedoors allow easy access for removal of clinker and for cleaning.

The standard "K" type front section (except the 5-K) has a circulating waterway between firedoor and ashpit door openings, but if specified on order this waterway can be omitted to provide an unrestricted ashpit opening, similar to that described for oil-burning boilers. This necessitates a back return header for which a charge is made.

Full particulars of the foundation or other special requirements should be secured from the maker of the stoker before designing the boiler house. Usually the boiler will need to be raised on one or more courses of brickwork.

Converting to Mechanical Stoking or Oil Burning. Where regular Ideal Britannia Boilers for hand-firing, with water-cooled grate, are already installed, they can be adapted for mechanical stoking by replacing certain of the intermediate sections with sections cast without water-cooled grate, to allow for the introduction of the stoker retort. For certain types of oil burners, the boilers can be adapted by providing a single layer of one-inch firebrick on the water-cooled grate, in addition of course to the usual insulating bricks on the floor beneath. In both cases, appropriate changes of platework should be made.

Converting to Hand-firing. Boilers fired by mechanical stoker or oil burner, not exceeding the length of those regularly listed on pages 106 to 117, can be converted for hand-firing by inserting grill grate bars and renewing the front platework. Whilst the longer boilers listed specially for mechanical stoking or oil burning could be similarly converted, hand-firing would be impracticable.

When ordering Boilers for Mechanical Stoking or Oil Burning, quote the distinguishing Catalogue Fig. No. (see pages 126–127).

For recommended flow connections, see page 68.

IDEAL BRITANNIA BOILERS

For Mechanical Stoking and Oil Burning

No.		Rating B.T.U. per hour	Heating Surface	Firebox		Available Combustion Chamber	*Set of flue baffles comprises
Mechanical Stoking	Oil Burning		Sq. ft.	Width In.	Length In.	Cu. ft.	
03KS	03KO	40,000	9·0	13	13	1·7	—
04	04	51,000	11·5	13	19	2·5	—
05	05	62,000	14·0	13	25	3·4	—
06	06	73,000	16·5	13	31	4·2	—
07	07	84,000	19·0	13	37	5·0	—
14KS	14KO	93,000	21·0	18	17	3·4	—
15	15	117,000	26·5	18	23	4·5	†1 pair
16	16	141,000	32·0	18	29	5·6	†2 pairs
17	17	165,000	37·5	18	35	6·7	†2 ,,
18	18	189,000	43·0	18	41	7·8	†3 ,,
19	19	213,000	48·5	18	47	8·9	†3 ,,
110	110	237,000	54·0	18	53	10·0	†4 ,,
24KS	24KO	159,000	35·5	25	17	5·0	1 pair
25	25	200,000	45·0	25	23	6·7	2 pairs
26	26	241,000	54·5	25	29	8·4	2 ,,
27	27	282,000	64·0	25	35	10·1	3 ,,
28	28	323,000	73·5	25	41	11·8	4 ,,
29	29	364,000	83·0	25	47	13·5	4 ,,
210	210	405,000	92·5	25	53	15·2	5 ,,
211	211	446,000	102·0	25	59	16·9	5 ,,
212	212	487,000	111·5	25	65	18·6	6 ,,
35KS	35KO	313,000	70·5	30	27	11·4	1 pair
36	36	379,000	85·5	30	34	14·3	2 pairs
37	37	445,000	100·5	30	41	17·2	3 ,,
38	38	511,000	115·5	30	48	20·1	4 ,,
39	39	577,000	130·5	30	55	23·0	4 ,,
310	310	643,000	145·5	30	62	25·9	5 ,,
311	311	709,000	160·5	30	69	28·8	5 ,,
312	312	775,000	175·5	30	76	31·7	6 ,,
313	313	841,000	190·5	30	83	34·6	7 ,,

* Baffles placed in uptakes, starting from the front section.

† To be placed in uptakes, starting from smokehood end of boiler.

IDEAL BRITANNIA BOILERS

For Mechanical Stoking and Oil Burning

No.		Rating B.T.U. per hour	Heating Surface	Firebox		Available Combustion Chamber	*Set of flue baffles comprises
Mechanical Stoking	Oil Burning		Sq. ft.	Width In.	Length In.	Cu. ft.	
47KS	47KO	625,000	141	38 ×	41	21·7	3 pairs
48	48	718,000	162	38 ×	48	25·4	4 ,,
49	49	811,000	183	38 ×	55	29·2	4 ,,
410	410	904,000	204	38 ×	62	32·9	5 ,,
411	411	997,000	225	38 ×	69	36·6	5 ,,
412	412	1,090,000	246	38 ×	76	40·3	6 ,,
413	413	1,183,000	267	38 ×	83	43·9	7 ,,
414	414	1,276,000	288	38 ×	90	47·6	7 ,,
415	415	1,369,000	309	38 ×	97	51·3	8 ,,
416	416	1,462,000	330	38 ×	104	55·0	9 ,,
57KS	57KO	1,132,000	—	50 ×	46	35·5	2 pairs
58	58	1,302,000	—	50 ×	54	41·6	3 ,,
59	59	1,472,000	—	50 ×	62	47·7	3 ,,
510	510	1,642,000	—	50 ×	70	53·8	4 ,,
511	511	1,812,000	—	50 ×	79	59·9	4 ,,
512	512	1,982,000	—	50 ×	87	66·0	5 ,,
513	513	2,152,000	—	50 ×	95	72·1	6 ,,
514	514	2,322,000	—	50 ×	103	78·2	6 ,,
515	515	2,492,000	—	50 ×	111	84·3	7 ,,

*** Baffles placed in uptakes, starting from the front section.**

Draw-off Cocks (one ¾ in. with Nos. 0 and 1 Series, two ¾ in. with No. 2 Series, and two 1 in. with Nos. 3, 4 and 5 Series) and Flue Brush supplied unless otherwise ordered.

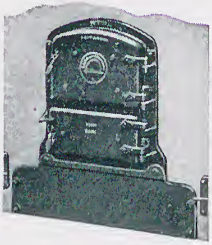
Jackets: When ordering Jackets, state position of flow and return tappings.

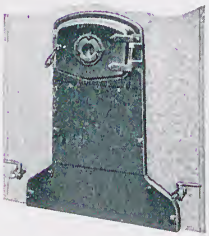
Jackets can be fitted after pipe connections have been made.

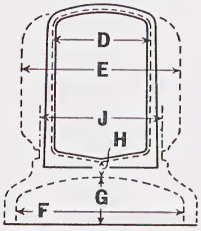
Jackets and doors can be supplied in vitreous enamel finish. (Except No. 5 Series.)

IDEAL BRITANNIA BOILERS

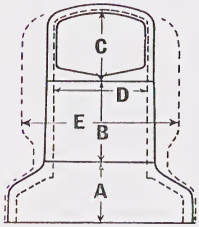
For Mechanical Stoking and Oil Burning







Mechanical Stoking



Oil Burning

No. 5-KO Series are fitted with a smaller explosion door.

DIMENSIONS IN INCHES

BOILER No.	A	B	C	D	E	F	G	H	J
03-07KS & KO	$7\frac{1}{16}$	$10\frac{1}{4}$	$7\frac{13}{16}$	$8\frac{1}{2}$	$13\frac{1}{2}$	$10\frac{1}{4}$	—	—	$6\frac{1}{4}$
14-110KS ,, KO	8	$10\frac{1}{2}$	$9\frac{3}{8}$	12	$18\frac{1}{4}$	$15\frac{1}{8}$	—	—	$10\frac{7}{8}$
24-212KS ,, KO	$8\frac{7}{8}$	$12\frac{3}{8}$	11	14	$25\frac{1}{4}$	21	$7\frac{7}{16}$	$2\frac{11}{16}$	17
35-313KS ,, KO	$9\frac{9}{16}$	$15\frac{1}{4}$	$11\frac{7}{16}$	16	$30\frac{1}{2}$	$29\frac{1}{4}$	$8\frac{1}{8}$	$2\frac{15}{16}$	$22\frac{1}{2}$
47-416KS ,, KO	$10\frac{5}{16}$	$15\frac{1}{4}$	$13\frac{5}{16}$	18	39	$38\frac{1}{4}$	$8\frac{3}{4}$	$3\frac{5}{16}$	30
57-515KS ,, KO	12	$16\frac{5}{8}$	$9\frac{3}{4}$	$20\frac{7}{16}$	$49\frac{13}{16}$	49	—	—	38

No. 0-KS and 0-KO Britannia

2½ in. return tapping on face of back section can be provided to special order. Height from floor to centre, 8½ in.

No. 1-KS and 1-KO Britannia

4 in. flanged return connection on face of back section can be supplied to special order. Height from floor to centre, 10 1/16 in.

No. 2-KS Britannia

On special order two 3 in. flanged return connections on face of back section can be provided. Height from floor to centre 8 7/16 in.; centre to centre 24⅝ in.

No. 3-KS Britannia

On special order, two 4 in. flanged return connections on face of back section can be provided. Height from floor to centre 9⅜ in.; centre to centre 33 in.

No. 3-KS and 3-KO Britannia

5 in. flanged flow and return connections can be supplied in place of those shown in table on page 131.

No. 4-KS Britannia

On special order two 4 in. flanged return connections on face of back section can be provided. Height from floor to centre 9⅞ in.; centre to centre 43¼ in.

No. 4-KS and 4-KO Britannia

5 in. and 6 in. flanged flow and return connections can be supplied in place of those shown in table on page 131.

For 6 in. connections, an adapter is used increasing height or width of boiler 4 in.; 6 in. flanged sockets can also be supplied.

Nos. 2, 3 and 4-KO

Flanged openings are provided on face of back section and headers Nos. 222, 2126 and 2026 respectively are supplied unless smaller outlets or other headers are specified. See pages 136 and 137. Where regular side returns are being used, these headers are sent with blank flanges and must be used.

A special intermediate section can be supplied for above boilers (excepting No. 0 Series), giving a horizontal flow connection on shoulder as follows:

No. 1 Series—3 in. screwed tapping; No. 2 Series—3 in., and Nos. 3 and 4 Series—4 in. tapped flange; see diagram page 139.

Intermediate sections of all boilers can be supplied with return connection on each side, see page 139.

For Boiler Fittings and Connections, see pages 138 and 139.

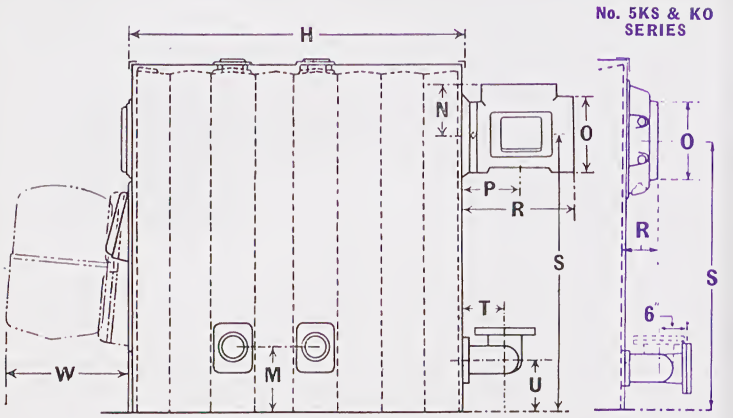
No. 5-KS and 5-KO

As no waterway is provided at grate bar level in front section a Return Header on face of back section is supplied with Boiler, and must be fitted. See pages 116 and 117.

For recommended flow connections, see page 68.

IDEAL BRITANNIA BOILERS

For Mechanical Stoking and Oil Burning



Smokehood with Socket Outlet at back, top or side for spigot end of smokepipe; fitted with checkdraught damper and cleaning door.

No. 5KS & KO Series, Smokehood complete with single damper, operated by quadrant fitment, and relief door on underside. Outlet suitable for spigot end of smoke pipe. Minimum internal dia. of socket outlets for 14 in. smokepipe—15 $\frac{7}{16}$ in. min.; 16 in.—17 $\frac{11}{16}$ in. min.; 18 in.—19 $\frac{13}{16}$ in. min.

DIMENSIONS IN INCHES

No.	Flow & Return	H	M	N	O	P	R	S	T	U	W
03KS & KO	1—2	18	$8\frac{1}{16}$	$5\frac{3}{8}$	6	$7\frac{1}{16}$	12	$25\frac{7}{16}$	—	$8\frac{1}{16}$	13
04 ,,	1—2	24									
05 ,,	2—2	30									
06 ,,	2—2	36									
07 ,,	2—2	42									
14KS & KO	1—3	$24\frac{1}{16}$	$9\frac{5}{8}$	$6\frac{3}{4}$	8	$8\frac{9}{16}$	$14\frac{5}{8}$	31	—	$10\frac{1}{16}$	16
15 ,,	1—3	$30\frac{1}{16}$									
16 ,,	1—3	$36\frac{1}{16}$									
17 ,,	2—3	$42\frac{1}{16}$									
18 ,,	2—3	$48\frac{1}{16}$									
19 ,,	2—3	$54\frac{1}{16}$									
110 ,,	2—3	$60\frac{1}{16}$									

IDEAL BRITANNIA BOILERS

For Mechanical Stoking and Oil Burning

DIMENSIONS IN INCHES

No.	Flow & Return	H	M	N	O	P	R	S	T	U	W
24KS & KO	2—4	$24\frac{1}{8}$	$9\frac{11}{16}$	$6\frac{3}{4}$	8	$8\frac{5}{8}$	$14\frac{11}{16}$	39	5	$8\frac{7}{16}$	$19\frac{3}{4}$
25 ,,	2—4	$30\frac{1}{8}$									
26 ,,	2—4	$36\frac{1}{8}$									
27 ,,	3—4	$42\frac{1}{8}$									
28 ,,	3—4	$48\frac{1}{8}$									
29 ,,	3—4	$54\frac{1}{8}$									
210 ,,	3—4	$60\frac{1}{8}$									
211 ,,	3—4	$66\frac{1}{8}$									
212 ,,	3—4	$72\frac{1}{8}$									
35KS & KO	2—4	$35\frac{3}{16}$	$10\frac{15}{16}$	8	10	$10\frac{1}{2}$	$17\frac{3}{4}$	$46\frac{5}{16}$	7	$9\frac{3}{8}$	$21\frac{1}{2}$
36 ,,	2—4	$42\frac{3}{16}$		8	10	$10\frac{1}{2}$	$17\frac{3}{4}$				
37 ,,	2—4	$49\frac{3}{16}$		8	10	$10\frac{1}{2}$	$17\frac{3}{4}$				
38 ,,	3—4	$56\frac{3}{16}$		8	10	$10\frac{1}{2}$	$17\frac{3}{4}$				
39 ,,	3—4	$63\frac{3}{16}$		9	12	$11\frac{1}{2}$	$19\frac{3}{4}$				
310 ,,	3—4	$70\frac{3}{16}$		9	12	$11\frac{1}{2}$	$19\frac{3}{4}$				
311 ,,	3—4	$77\frac{3}{16}$		9	12	$11\frac{1}{2}$	$19\frac{3}{4}$				
312 ,,	3—4	$84\frac{3}{16}$		9	12	$11\frac{1}{2}$	$19\frac{3}{4}$				
313 ,,	3—4	$91\frac{3}{16}$		9	12	$11\frac{1}{2}$	$19\frac{3}{4}$				
47KS & KO	2—4	$49\frac{5}{16}$	$11\frac{1}{2}$	$9\frac{3}{16}$	12	$11\frac{3}{4}$	20	51	7	$9\frac{7}{8}$	24
48 ,,	2—4	$56\frac{5}{16}$		$9\frac{3}{16}$	12	$11\frac{3}{4}$	20				
49 ,,	3—4	$63\frac{5}{16}$		$9\frac{3}{16}$	12	$11\frac{3}{4}$	20				
410 ,,	3—4	$70\frac{5}{16}$		$9\frac{3}{16}$	12	$11\frac{3}{4}$	20				
411 ,,	4—4	$77\frac{5}{16}$		$9\frac{3}{16}$	12	$11\frac{3}{4}$	20				
412 ,,	4—4	$84\frac{5}{16}$		$10\frac{3}{16}$	14	$12\frac{3}{4}$	22				
413 ,,	4—4	$91\frac{5}{16}$		$10\frac{3}{16}$	14	$12\frac{3}{4}$	22				
414 ,,	4—4	$98\frac{5}{16}$		$10\frac{3}{16}$	14	$12\frac{3}{4}$	22				
415 ,,	4—4	$105\frac{5}{16}$		$10\frac{3}{16}$	14	$12\frac{3}{4}$	22				
416 ,,	4—4	$112\frac{5}{16}$		$10\frac{3}{16}$	14	$12\frac{3}{4}$	22				
57KS & KO	2—6	$55\frac{5}{8}$	$9\frac{1}{4}$	—	14	—	7	$57\frac{5}{16}$	$10\frac{3}{8}$	$8\frac{1}{2}$	$26\frac{1}{4}$
58 ,,	2—6	$63\frac{3}{4}$			14						
59 ,,	2—6	$71\frac{7}{8}$			14						
510 ,,	3—6	80			16						
511 ,,	3—6	$88\frac{1}{8}$			16						
512 ,,	4—6	$96\frac{1}{4}$			16						
513 ,,	4—6	$104\frac{3}{8}$			16						
514 ,,	4—6	$112\frac{1}{2}$			18						
515 ,,	4—6	$120\frac{5}{8}$			18						

STOKING TOOLS

The table below shows the composition of sets of Stoking Tools regularly supplied with Boilers for hand-firing.

	Set 1	Set 2	Set 3	Set 3A	Set 4	Set 5	Set 6	Set 7	Set 8
For Boiler Nos.	O-DE L00	L1-L2 4D-6D HW20	O-XLB 1-XLB	Autocrat 1 & 2A	14D 15D	HW 3 & 4	HW 5 & 6	HW 7 & 8	NC 31A-51A
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d
Shovel	2 7	6 3	6 3	6 6	21 6	19 6	23 0	23 0	8
Poker (bent)	2 3	2 3	—	—	3 9	—	—	—	—
Slice Bar	—	1 4	1 4	1 10	3 10	4 3	8 0	9 11	2
Flue Brush	—	—	—	—	—	—	—	—	8
Scraper	—	—	—	—	—	3 10	5 3	7 0	3
Clinker Tool	—	3 3	3 3	—	7 1	6 4	12 0	12 0	4
TOTAL	4 10	13 1	10 10	8 4	1 16 2	1 13 11	2 8 3	2 11 11	1 6

	Set 9	Set 10	Set 11	Set 12	Set 13	Set 14	Set 15	Set 1
For Boiler Nos.	NC 61A-71A	NC 42A-52A	NC 62A-92A	03-05K HW30-40	14-15K 24-25K	16-17K 26-27K	06-07K HW50-60	35-36
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s.
Shovel	8 0	8 0	19 6	19 6	23 0	23 0	19 6	24
Slice Bar	3 2	4 1	5 0	4 6	4 10	8 5	8 5	8
Flue Brush	8 4	8 4	8 4	—	10 4	11 7	—	11
Scraper	3 3	3 3	3 10	3 10	6 1	7 0	5 0	7
Clinker Tool	4 3	4 3	6 4	6 4	12 1	12 1	6 4	12
TOTAL	1 7 0	1 7 11	2 3 0	1 14 2	2 16 4	3 2 1	1 19 3	3 4

	Set 17	Set 18	Set 19	Set 20	Set 21	Set 22	Set 23
For Boiler Nos.	18K 28-29K	37-38K	47-48K	39-310K	49-410K	311K 411-412K	413-414
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Shovel	23 0	24 11	24 11	24 11	24 11	24 11	24 11
Slice Bar	9 11	9 11	9 11	14 8	14 8	21 9	24 5
Flue Brush	12 2	12 2	14 1	15 6	17 1	18 5	20 0
Scraper	7 11	7 11	7 11	11 1	11 1	12 4	17 6
Clinker Tool	12 1	12 1	12 1	12 1	12 1	12 1	12 1
TOTAL	3 5 1	3 7 0	3 8 11	3 18 3	3 19 10	4 9 6	4 18 11

5 × 5 × 2 Flue Brush Heads only; for Nos. 1K & 2K, 35K-310K Britannia Boilers
PRICE 7/9 each

5 × 5 × 5 Flue Brush Heads only; for Nos. 311K & 4K & 5K Britannia Boilers
PRICE 9/6 each

Flue Brush Head for Ideal Neo-Classic Boilers PRICE 5/9 each

Rack for Stoking Tools PRICE 18/- each

The table below shows the composition of sets of Stoking Tools regularly supplied with Boilers for hand-firing.

For Boiler Nos.	Set 24 57K s. d.	Set 25 58-59K s. d.	Set 26 510-511K s. d.	Set 27 512-513K s. d.
Shovel	24 11	24 11	24 11	24 11
Hoe	8 10	10 11	13 6	18 5
Slice Bar	9 11	14 8	21 9	24 5
Flue Brush	14 1	17 1	18 5	20 0
Scraper	7 11	11 1	12 4	17 6
Clinker Tool	12 1	12 1	12 1	12 1
TOTAL	£3.17.9	£4.10.9	£5.3.0	£5.17.4

Mechanical Stoking and Oil Burning Boilers, Flue Brush only will be supplied; prices for longer boilers see table below.

A flexible flue brush will be supplied for the Nos. 0 and 1 Series HWS and HWO Sectional Domestic Boiler. PRICE 8/- each.

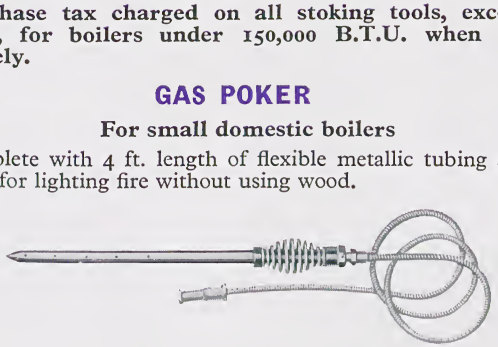
For Boiler Nos.	19-110 KS & KO s. d.	210-212 KS & KO s. d.	312-313 KS & KO s. d.	415-416 KS & KO 514-515 KS & KO s. d.
Flue Brush	12 2	15 6	18 5	20 0

Purchase tax charged on all stoking tools, except flue brushes, for boilers under 150,000 B.T.U. when ordered separately.

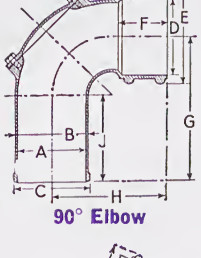
GAS POKER

For small domestic boilers

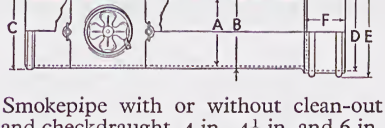
Complete with 4 ft. length of flexible metallic tubing and connections for lighting fire without using wood.



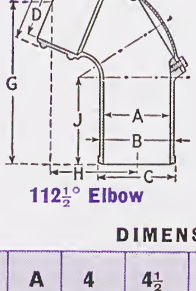
CAST-IRON SMOKEPIPE AND ELBOWS



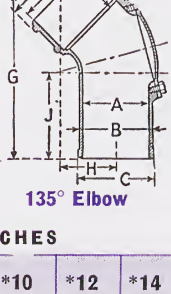
90° Elbow



Smokepipe with or without clean-out and checkdraught. 4 in., 4½ in. and 6 in. plain smokepipe can be supplied with spigot both ends.



112½° Elbow



135° Elbow

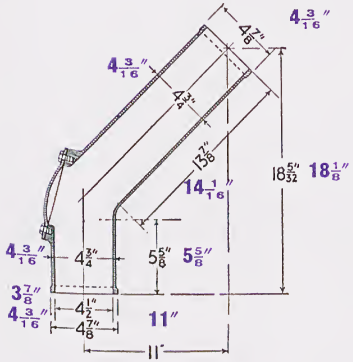
DIMENSIONS IN INCHES

	A	4	4½	6	8	*10	*12	*14	‡16	‡18
Smokepipe Elbows	B	$4\frac{3}{16}$	$4\frac{13}{16}$	$6\frac{5}{16}$	$8\frac{3}{8}$	$10\frac{7}{16}$	$12\frac{1}{2}$	$14\frac{11}{16}$	$16\frac{7}{8}$	$18\frac{7}{8}$
	C	$4\frac{3}{16}$	$4\frac{7}{8}$	$6\frac{7}{16}$	$8\frac{1}{2}$	$10\frac{11}{16}$	$12\frac{3}{4}$	$14\frac{15}{16}$	$17\frac{1}{8}$	$19\frac{1}{8}$
	D	$4\frac{7}{16}$	$5\frac{1}{8}$	$6\frac{3}{4}$	$8\frac{15}{16}$	$11\frac{1}{4}$	$13\frac{5}{16}$	$15\frac{9}{16}$	$17\frac{5}{8}$	$19\frac{5}{8}$
	E	$5\frac{1}{16}$	$5\frac{3}{4}$	$7\frac{7}{16}$	10	$12\frac{1}{2}$	$14\frac{11}{16}$	17	$19\frac{1}{2}$	$21\frac{9}{16}$
	F	$2\frac{1}{2}$	†$2\frac{1}{2}$	†3	4	$4\frac{1}{4}$	$4\frac{1}{4}$	$4\frac{1}{4}$	$4\frac{3}{8}$	$4\frac{1}{2}$
90° Elbows	G	9	$9\frac{1}{2}$	11	13	15	17	$18\frac{1}{8}$	$20\frac{1}{2}$	22
	H	$6\frac{5}{8}$	$7\frac{3}{8}$	$8\frac{29}{32}$	$10\frac{27}{32}$	$12\frac{17}{32}$	$13\frac{11}{16}$	$14\frac{7}{8}$	$16\frac{1}{2}$	$17\frac{13}{16}$
	J	$5\frac{3}{8}$	$5\frac{5}{8}$	$6\frac{29}{32}$	$6\frac{29}{32}$	$7\frac{19}{32}$	$8\frac{7}{16}$	$8\frac{3}{8}$	$9\frac{9}{16}$	$9\frac{15}{16}$
112½° Elbows	G	$9\frac{7}{8}$	$10\frac{17}{32}$	$12\frac{7}{32}$	–	–	–	–	–	–
	H	5	$5\frac{5}{8}$	$6\frac{3}{4}$	–	–	–	–	–	–
	J	$5\frac{3}{8}$	$5\frac{5}{8}$	$6\frac{7}{32}$	–	–	–	–	–	–
135° Elbows	G	$10\frac{1}{16}$	$10\frac{27}{32}$	$12\frac{17}{32}$	$14\frac{9}{16}$	$16\frac{15}{32}$	$18\frac{1}{8}$	$18\frac{29}{32}$	$21\frac{3}{16}$	$22\frac{1}{2}$
	H	$3\frac{3}{16}$	$3\frac{19}{32}$	$4\frac{5}{16}$	$5\frac{5}{32}$	$5\frac{25}{32}$	$6\frac{1}{8}$	$6\frac{1}{2}$	$7\frac{1}{8}$	$7\frac{19}{32}$
	J	$5\frac{3}{8}$	$5\frac{5}{8}$	$6\frac{7}{32}$	$6\frac{29}{32}$	$7\frac{19}{32}$	$8\frac{7}{16}$	$8\frac{3}{8}$	$8\frac{1}{2}$	$9\frac{1}{2}$

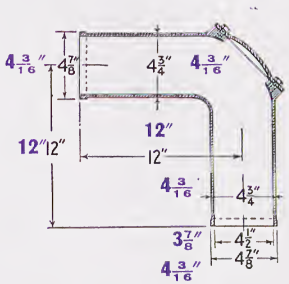
† *Smokepipe only. Elbows: 4½ in. 3″; 6 in. 3½″.* ‡ *Smokepipe not supplied in 2 ft. lengths.*

*** 10 in., 12 in. and 14 in. smokepipe is no longer available in cast-iron. It can, however, be supplied of welded steel plate in 3 ft., 4 ft. and 6 ft. lengths without socket.**

4 & 4½ INCH ELBOWS & OFFSETS

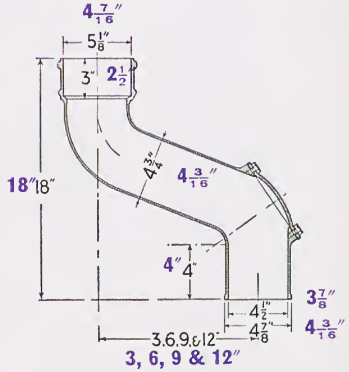


135° Elbows with spigot ends, one end extended.



90° Elbows with spigot ends.

Dimensions of 4 inch size are printed in purple

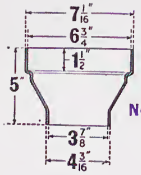


Offsets can be supplied with spigot both ends.

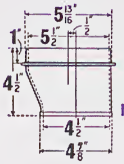
Supplied standard as Black cast, also available in Black, Grey Mottle, or Cream Mottle Vitreous Enamel finish.

Asbestos-Cement Flue Pipe and Fittings, pages 150 and 151.

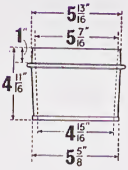
CAST-IRON SMOKEPIPE ACCESSORIES



No. 1

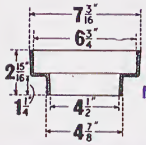


No. 2

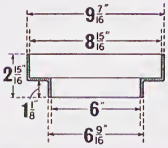


No. 3

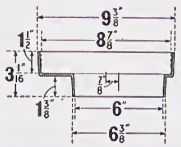

Collar



No. 4



No. 5



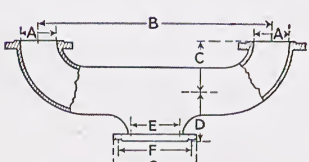
No. 6

Adapter	Size	Suitable for Boiler Nos.
No. 1	4 in. × 6 in.	0-DE, L00, 0-XLB & 1 'Autocrat'
No. 2	4½ in. × 6 in.	L1, L2, 4D, 5D & 6D
No. 3	4½ in. × 6 in.	14D
No. 4	4½ in. (Spigot) × 6 in. (Socket)	1-XLB, 2A 'Autocrat' 1A Series Neo-Classic
No. 5	6 in. × 8 in. (Concentric)	0-Series Sectional Domestic,
No. 6	6 in. × 8 in. (Eccentric)	0-Series Britannia

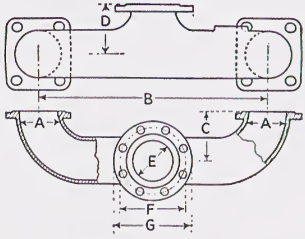
Cast-iron Collar for making tight joint where smokepipe passes through blanking-off plate. Available in 4 in., 4½ in. and 6 in. sizes. Supplied standard Black cast, also available in Black, Grey Mottle or Cream Mottle Vitreous Enamelled finish.

Asbestos-Cement Flue Pipe and Fittings, pages 150–151.

FLOW AND RETURN HEADERS
For Ideal Britannia Boilers



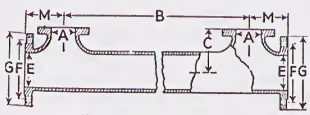
Nos. 2034, 2035, 2036, 346, 2134, 2135



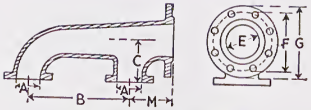
Nos. 222, 2024, 2025, 2026, 2124, 2125, 2126, 336

For Details and Dimensions, see opposite page.

Continued from page 136



Nos. 204, 214, 224



Nos. 182, 184, 186, 188

DIMENSIONS IN INCHES

No.	Boiler Series	Type	A	B	C	D	E	F	G	M
† 222	2 Brit.	Back R.	3	$24\frac{5}{8}$	5	5	4	7	$8\frac{1}{2}$	—
† 224	2 ,,	,,				—	4	7	$8\frac{1}{2}$	$5\frac{1}{2}$
182	3 ,,	F. or R.	4	14	6	—	6	$9\frac{1}{4}$	11	6
184	3 ,,	,,					5	$8\frac{1}{4}$	10	6
†2124	3 ,,	Back R.		33	7	5	4	7	$8\frac{1}{2}$	—
†2125	3 ,,	,,					5	$8\frac{1}{4}$	10	—
†2126	3 ,,	,,					6	$9\frac{1}{4}$	11	—
†2134	3 ,,	,,					4	7	$8\frac{1}{2}$	—
†2135	3 ,,	,,					5	$8\frac{1}{4}$	10	—
† 214	3 ,,	,,		33	6	—	5	$8\frac{1}{4}$	10	$5\frac{1}{2}$
186	4 ,,	F. or R.	5	14	6	—	5	$8\frac{1}{4}$	10	6
188	4 ,,	,,					6	$9\frac{1}{4}$	11	6
†2024	4 ,,	Back R.	4	$43\frac{1}{4}$	7	5	4	7	$8\frac{1}{2}$	—
†2025	4 ,,	,,					5	$8\frac{1}{4}$	10	—
†2026	4 ,,	,,					6	$9\frac{1}{4}$	11	—
†2034	4 ,,	,,					4	7	$8\frac{1}{2}$	—
†2035	4 ,,	,,					5	$8\frac{1}{4}$	10	—
†2036	4 ,,	,,					6	$9\frac{1}{4}$	11	—
† 204	4 ,,	,,			6	—	5	$8\frac{1}{4}$	10	$5\frac{1}{2}$
‡ 336	5 ,,	,,	5	$50\frac{1}{4}$	$10\frac{3}{8}$	6	6	$9\frac{1}{4}$	11	—
‡ 346	5 ,,	,,					6	$9\frac{1}{4}$	11	—

† Supplied without charge with boilers for oil fuel. State Figure Number required.

‡ Supplied without charge. No. 346 as standard. No. 336 to special order.

BOILER FITTINGS AND CONNECTIONS

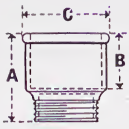


Fig. 1. Threaded Socket.

Fig. 2. Threaded Flange.

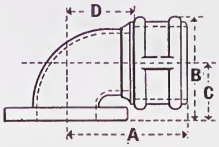


Fig. 3. Flanged Elbow Socket.

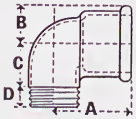


Fig. 4. Threaded Elbow Socket.

Fig. 5. Flange only.

Fig. 6. Flanged Socket.

DIMENSIONS IN INCHES

Fig.	2 inch				3 inch				4 inch				5 inch		
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C
1	$5\frac{1}{4}$	$2\frac{3}{4}$	$4\frac{1}{2}$	—	6	3	$5\frac{5}{8}$	—	$6\frac{1}{2}$	4	$6\frac{5}{8}$	—	7	$4\frac{3}{8}$	$7\frac{5}{8}$
2	$2\frac{5}{8}$	$\frac{3}{4}$	—	—	$2\frac{7}{8}$	$\frac{3}{4}$	—	—	$3\frac{1}{8}$	1	—	—	$3\frac{3}{8}$	1	—
3	6	5	$2\frac{7}{8}$	$3\frac{3}{8}$	$7\frac{1}{4}$	$6\frac{1}{4}$	$3\frac{5}{8}$	4	$8\frac{3}{8}$	$7\frac{1}{4}$	4	$4\frac{7}{8}$	—	—	—
4	$4\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$	$1\frac{1}{2}$	$5\frac{5}{8}$	$2\frac{5}{8}$	$3\frac{3}{8}$	$1\frac{5}{8}$	$6\frac{3}{4}$	$3\frac{1}{4}$	$3\frac{7}{8}$	$1\frac{5}{8}$	—	—	—
*5	1	—	—	—	$1\frac{1}{8}$	—	—	—	$1\frac{1}{4}$	—	—	—	$1\frac{3}{8}$	—	—
6	$3\frac{3}{4}$	$\frac{3}{4}$	—	—	$4\frac{1}{4}$	$\frac{7}{8}$	—	—	$4\frac{1}{2}$	1	—	—	—	—	—

Fig.	3 × 2 in.				3 × 2½ in.			4 × 2½ in.			4 × 3 in.			
	A	B	C	D	A	B	C	A	B	C	A	B	C	D
1	$6\frac{1}{4}$	$3\frac{3}{8}$	$5\frac{3}{4}$	—	$5\frac{5}{8}$	3	$5\frac{3}{4}$	$5\frac{3}{4}$	$3\frac{7}{8}$	$6\frac{5}{8}$	$6\frac{1}{2}$	4	$6\frac{7}{8}$	—
4	$5\frac{1}{4}$	$2\frac{5}{8}$	3	$1\frac{1}{2}$	—	—	—	—	—	—	$6\frac{5}{16}$	$3\frac{3}{16}$	$3\frac{3}{4}$	$1\frac{5}{8}$

* Fig. 5 also available in 6 in. 'A' dimension $1\frac{1}{2}$ in.

All flanges are British Standard (Table D).

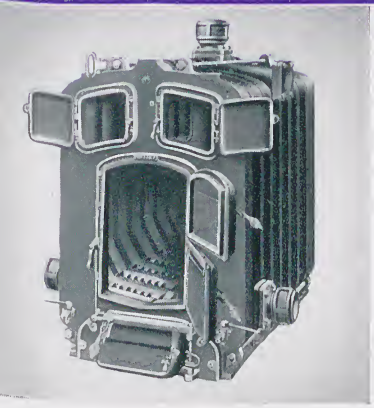
Also available: Flange, $7\frac{1}{4}$ in. dia. tapped 2 in. with 2 in. Close Taper Nipple.
Flange, $8\frac{1}{2}$ in. dia. tapped 3 in. with 3 in. Close Taper Nipple.
Flanged Socket, 6 in. for No. 4 Series Britannia Boilers.
Bolts ($\frac{5}{8}$ in.) for Flanges.

No. 9 BOILER WRENCH

For assembling Ideal Sectional Boilers

2″ and 2½″ nipple wrench and key are available for Ideal Neo-Classic Boilers.

BOILER FITTINGS AND CONNECTIONS

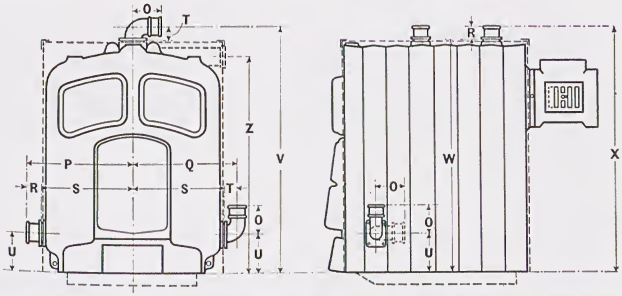


Britannia Boiler with shoulder flow. Height from floor to centre, 1-K, 35⅞ in.; 2-K, 45⅛ in.; 3-K, 52 11/16 in.; 4-K, 61⅞ in.

No. 6B-Flow or Return. 4 & 5 in.

No. 3B-Flow or Vertical Return. 4 & 5 in.

No. 3 BL-Flow or Horizontal Return. 4 & 5 in.



Britannia Boiler Series	Size In.	DIMENSIONS IN INCHES										
		O	P	Q	R	*S	T	U	V	*W	X	Z
2-K	4	8½	22 5/16	20 5/16	6	16 5/16	4	9 1/16	53	49	55	45⅛
3-K	4	8½	27	25	6	21	4	10 5/16	61 3/16	57 3/16	63 3/16	52 1/16
3-K	5	9	27	25¼	6	21	4¼	10 5/16	62 1/16	57 3/16	63 3/16	52 1/16
4-K	4	8½	30½	30¼	4¼	26¼	4	11½	70⅞	66⅞	71⅛	61¾
4-K	5	9	32¼	30½	6	26¼	4¼	11½	71⅛	66⅞	72⅞	61¾

* Including ⅛ inch for Gasket.

For recommended flow connections, see page 68.

No. 2-DGA

No. 3-DGA

No.	B.T.U. per hour	*Gas Consumption Cu. ft. per hour	Equivalent Gallons per hour 40°-120°	40°-140°	Approx. Tank size Gal.
1-DGA	20,000	54	25·0	20	25-30
2-DGA	30,000	80	37·5	30	30-40
3-DGA	45,000	120	56·0	45	50-60

* Calculated at 500 B.T.U. gross value per cubic foot. Consumption at other values can be computed on the basis of a boiler efficiency equal to 75 per cent. of the gross calorific value of the gas.

State calorific value of gas when ordering.

Boiler **Bower-barffed** (Rust-resistant treatment) available to special order.

Standard Finish and Fittings.

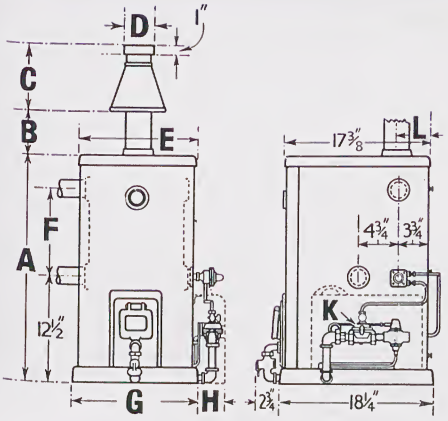
Top plate, Diverter, Front Panel and Baseplate vitreous enamelled in Black. Jacket (insulated) vitreous enamelled in cream; with Detachable stove enamelled Bonnet.

Heat Indicator (with Nos. 1 and 2-DGA only).

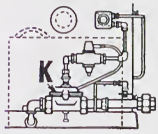
"On-off" Gas Control Valve, Gas Governor, Thermostat and Thermocouple Safety Device. Chromium-plated Gas Cock with pipe connections to Control Valve. Flue brush. ½-in. Draw-off Plug, supplied unless otherwise ordered.

GAS DOMESTIC BOILERS No. 1, 2 & 3-DGA

For Direct Hot Water Supply



Arrangement of Controls
No. 3-DGA only
(Side view)



DIMENSIONS IN INCHES

A	B	C	*D	E	F	G	H	†K	L	No. and Size of Clean-out Openings of back only	Tappings ‡Flow and Return
23⅛	5⅛	7 1/16	3	13⅞	6¾	14¾	3¾	½	4	3-2½	1½
26⅝	6⅛	7 1/16	3	13⅞	10 3/16	14¾	3¾	½	4	6-2	1½
26⅝	9¼	7¾	4½	17⅞	10 3/16	18¾	5	¾	5	6-2	1½

* Socket Outlet, suitable for spigot end of asbestos cement flue pipe of the size stated.

† The size of Control Valve and Governor also indicates the size of gas supply, except where the distance between meter and boiler exceeds about 20 ft., when it is necessary to use supply pipe of the next larger diameter.

Unless otherwise ordered, flow and return tappings will be provided at left-hand side, with return tapping below and in line with the flow tappings. Right-hand tappings can be supplied to order—position as illustrated above. Thermostat is always supplied at right-hand side.

For particulars of Clock Controller, see pages 152–153.

Asbestos Cement Flue Pipe and Fittings, pages 150–151.

No. 1-GBC-3

No.	B.T.U. per hour	Direct Radiation Sq. ft.	*Gas Consumption Cu. ft. per hour	Water Capacity Gal.	Number of Sections
-GBC-2	26,000	163	65	6·5	2
-GBC-3	49,000	306	123	7·8	3
-GBC-4	72,000	450	180	9·1	4
-GBC-5	95,000	594	238	10·5	5
-GBC-6	118,000	738	295	11·8	6
-GBC-7	142,000	888	355	13·1	7

** Calculated at 500 B.T.U. gross value per cubic foot.*

Consumption at other values can be computed from the B.T.U. rating on the basis of a boiler efficiency equal to 80 per cent. of the gross calorific value of the gas.

When ordering, the calorific value, specific gravity and the supply pressure of the gas must be stated.

Standard Finish and Fittings

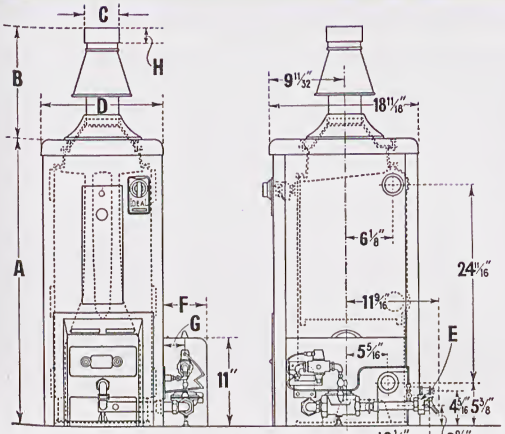
Platework and Diverter black vitreous enamelled. Insulated jacket cream stove enamelled, with jacket top black. Detachable stove enamelled Bonnet.

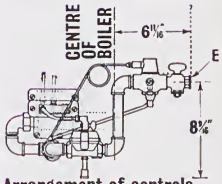
"On-off" Gas Control Valve, Gas Governor, Thermostat and Thermocouple Safety Device.

Two ½-in. Draw-off Plugs and two Flue Brushes supplied.

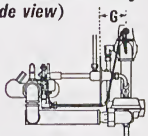
IDEAL GAS BOILERS No. 1-GBC SERIES

For Heating and Indirect Hot Water Supply





Arrangement of controls
2 section boiler only
(side view)



Arrangement of controls
2 section boiler only
(front view)

DIMENSIONS IN INCHES

No.	A	B	*C	D	†E	F	G	H	Number and Size of Tappings	
									Flow	Return
1-GBC-2	35 7/8	11 7/8	3	12 1/8	1/2	4 3/8	2 1/4	1	‡1-2	‡1-2
1-GBC-3	35 7/8	13 7/8	4	15 1/2	3/4	5 1/2	2 7/8	2	‡1-2	‡1-2
1-GBC-4	35 7/8	12 7/8	4 1/2	18 7/8	3/4	5 1/2	2 7/8	1	2-2	2-2
1-GBC-5	37 3/8	13 7/8	5	22 1/4	1	5 1/2	2 7/8	2	2-2	2-2
1-GBC-6	37 3/8	13 7/8	6	25 5/8	1	5 1/2	2 7/8	2	2-2	2-2
1-GBC-7	37 3/8	13 7/8	6	29	1	5 1/2	2 7/8	2	2-2	2-2

* Socket Outlet, suitable for spigot end of asbestos cement flue pipe of size stated.

† The size of "On-off" Control Valve and Governor also indicates the size of gas supply, except where the distance between meter and boiler exceeds about 20 ft., when it is necessary to use supply pipe of the next larger diameter.

‡ Unless otherwise ordered, these tappings will be supplied on left-hand side.

Room Thermostat and Clock Controller, pages 152, 153.
Asbestos Cement Flue Pipe and Fittings, pages 150, 151.

No. 2-GBB-5

Brit. Patent No. 646472

No.	B.T.U. per hour	Direct Radiation Sq. ft.	*Gas Consumption Cu. ft. per hour	Water Capacity Gal.	Number of Sections
2-GBB-5	220,000	1,375	550·0	48·2	5
2-GBB-6	255,000	1,594	637·5	57·3	6
2-GBB-7	290,000	1,813	725·0	67·1	7
2-GBB-8	325,000	2,032	812·5	76·2	8

* *Calculated at 500 B.T.U. gross value per cubic foot.*

Consumption at other values can be computed from the B.T.U. rating on the basis of a boiler efficiency equal to 80% of the gross calorific value of the gas.

When ordering, the calorific value, specific gravity and the supply pressure of the gas must be stated.

Room Thermostat and Clock Controller, pages 152 and 153.

Asbestos-Cement Flue Pipe and Fittings, pages 150 and 151.

Standard Finish and Fittings. Insulated jacket of aluminium, with top in black stove enamelled steel. Diverter black vitreous enamelled (except skirt, which is of aluminium).

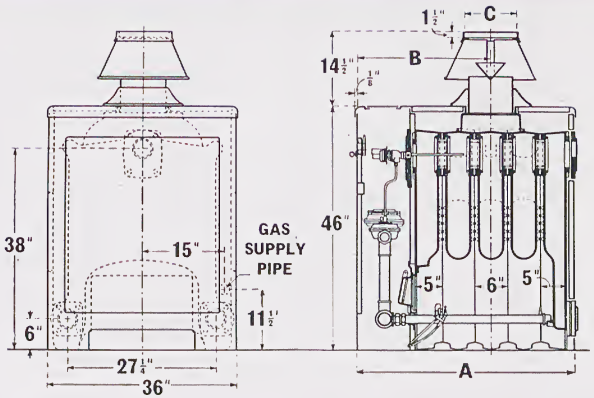
"On-off" Gas Control Valve, Thermostat, Thermometer, Thermocouple safety device and Main Gas Cock.

Gas Governor. One $\frac{3}{4}$ in. Draw-off Cock. Two Flue Brushes.

All controls are accommodated inside jacket, which is fitted with readily removable front panel.

IDEAL GAS BOILERS No. 2-GBB SERIES

For Heating and Indirect Hot Water Supply



DIMENSIONS IN INCHES

No.	A	B	*C	Number and Size of Tappings at Back	
				†Flow	Return
2-GBB-5	40¼	24½	8	1-3	2-3
2-GBB-6	46¼	24½	8	1-3	2-3
2-GBB-7	52¼	27½	10	1-3	2-3
2-GBB-8	58¼	33½	10	1-3	2-3

* *Socket Outlet, suitable for spigot end of asbestos-cement flue pipe of size stated.*

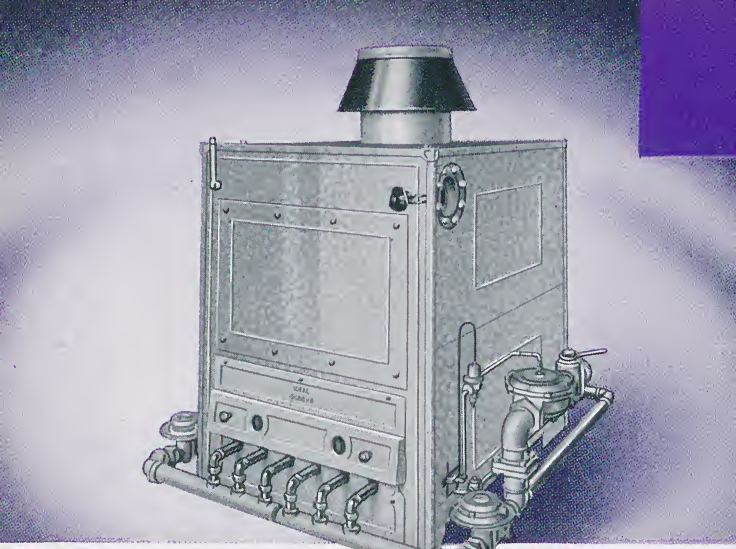
† 4 in. or 5 in. Flow Tapping can be provided in place of above. Height from floor to centre, 4 in.—37½ in., 5 in.—37 in.

Two ¾ in. Tappings are provided on top of back section for safety valve and vent pipe.

A 1½ in. gas feed pipe extends with union through back of jacket, but to ensure the required volume of gas, especially with the 7 and 8 section boilers, it may be necessary to continue to the meter with larger pipe and fittings.

As the boiler flues are cleaned from the sides, ample room for this purpose should be allowed when positioning the boiler.

The foundation for the boiler should be of insulating material with a hard surface. Two steel plates should be grouted flush with the foundation for the feet of the boiler to rest on.



No. 3-GBC-8

No. Water	No. *Steam	B.T.U. per hour	Direct Radiation in Square Feet		†Gas Consumption	Water Capacit Gallons	
			Water	Steam	Cu. ft. per hour	Water	Steam
3-GBC- 5—	50	390,000	2,430	1,510	975	86	62
3-GBC- 6—	60	520,000	3,245	2,020	1,300	102	73
3-GBC- 7—	70	650,000	4,060	2,530	1,625	118	84
3-GBC- 8—	80	780,000	4,875	3,040	1,950	134	95
3-GBC- 9—	90	910,000	5,690	3,550	2,275	150	106
3-GBC-10—	100	1,040,000	6,505	4,060	2,600	166	117
3-GBC-11—	110	1,170,000	7,320	4,570	2,925	182	128
3-GBC-12—	120	1,300,000	8,135	5,080	3,250	198	139
3-GBC-13—	130	1,430,000	8,950	5,590	3,575	214	150

* *Suitable for steam up to 15 lb. sq. in.*

† Calculated at 500 B.T.U. gross value per cubic foot. Consumption at other values can be computed from the B.T.U. rating on the basis of a boiler efficiency equal to 80% of the gross calorific value of the gas. When ordering, the calorific value, specific gravity and supply pressure must be stated.

Flue clean-out panels are provided at front and back.

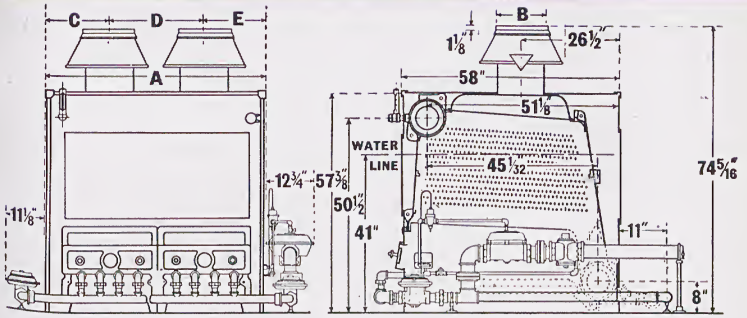
For details of Accessory Tappings see page 69; Room Thermostat and Clock Controller (pages 152–153); Asbestos-Cement Flue Pipe and Fittings (pages 150–151). See also page 71, "Steam Boilers".

An insulated foundation should be used; dimensional drawing on application.

Steam mountings, supplied unless otherwise ordered, see page 158.

IDEAL GAS BOILERS No. 3-GBC

For Hot Water and Steam Heating **SERIES**



DIMENSIONS IN INCHES

No. of Sections	A	Socket Outlets B	C	D	E	Number and Size of Tappings Flow and Return
5	29¼	1-10	—	—	14⅝	1-5 in.
6	34½	1-12	—	—	17¼	1-5 in.
7	39¾	1-14	—	—	19⅞	1-5 in.
8	45	1-16	—	—	22½	1-5 in.
9	50¼	2-10	14⅝	21	14⅝	2-5 in.
10	55½	1-10* / 1-12	14⅝	23⅝	17¼	2-5 in.
11	60¾	2-12	17¼	26¼	17¼	2-5 in.
12	66	1-12* / 1-14	17¼	28⅞	19⅞	2-5 in.
13	71¼	2-14	19⅞	31½	19⅞	2-5 in.

* *Smaller sized diverter on left.*

Standard Finish and Fittings

Insulated Galvanised Steel Jacket. Can be fitted after pipe connections are made. Front platework (frame, door and burner manifold) vitreous enamelled in Grey Mottle.

"On-off" Gas control valve and thermostat complete with dull nickel-plated copper tube connections. Thermocouple safety device.

Gas Governor. Flue Brush. Two 1 in. Draw-off Cocks. Diverter.

Boilers with less than eight sections are provided with 2 in. Main Cock, Control Valve and Governor. Boilers of eight sections and over require a 3 in. gas supply. A 3 in. Main Cock and Control Valve with two 2 in. Governors are supplied. Necessary pipe and fittings for making left and right-hand connection being included. The size of gas supply main should be as follows, unless the distance between meter and boiler exceeds that stated, when larger pipe should be used.

3-GBC-5	2 in. 40 ft.	3-GBC-8	3 in. 90 ft.	3-GBC-11	3 in. 50 ft.
3-GBC-6	2 in. 30 ft.	3-GBC-9	3 in. 70 ft.	3-GBC-12	3 in. 40 ft.
3-GBC-7	2 in. 40 ft.	3-GBC-10	3 in. 60 ft.	3-GBC-13	3 in. 30 ft.

NOTES

IDEAL ACCESSORIES

Accelerators

Asbestos Cement Flue Pipe & Fittings

Control Valves & Draw-off Cocks

Aircocks

Full-way Fittings for Copper Tube

Gas Boiler Accessories

Malleable-iron Fittings & Brackets

Pipe Tools

Safety Valves

Thermometers, Altitude Gauges

and Regulators

Towel Rails

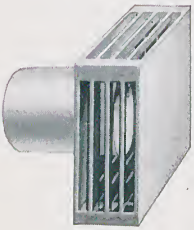
SQUARE BEND

OBTUSE BEND

CAP

SOCKETED FLUE PIPE

PLAIN FLUE PIPE



G.L.C. VENTILE

G.L.C. TERMINAL

COWL

TEE PIECE

ASBESTOS-CEMENT FLUE PIPE & FITTINGS

For Ideal Gas Boilers

* **SQUARE BENDS** Obtainable in the following Internal Diameters: 3, 4, 4½, 5, 6, 8, 10, 12, 14 and 16 inches.

* **OBTUSE BENDS** Obtainable in the following degrees: 100°, 110°, 120° and 135° with Internal Diameters of: 3, 4, 4½, 5, 6, 8, 10, 12, 14 and 16 inches.

BLANK CAPS Obtainable in the following Internal Diameters: 3, 4, 4½, 5, 6, 8, 10, 12, 14 and 16 inches.

SOCKETED OR PLAIN FLUE PIPE Obtainable in 3 ft. or 6 ft. lengths in the following Internal Diameters: 3, 4, 4½, 5, 6, 8, 10, 12, 14 and 16 inches. In sizes 8 inches and over, 4 ft. lengths are also available.

G.L.C. VENTILE Obtainable in the following Internal Diameters: 3, 4, 4½, 5, 6 and 8 inches.

G.L.C. TERMINAL Obtainable in the following Internal Diameters: 3, 4, 4½, 5, 6, 8, 10, 12 and 14 inches.

COWLS Obtainable in the following Internal Diameters: 3, 4, 4½, 5, 6, 8, 10, 12, 14 and 16 inches.

† **TEE PIECES** Obtainable Square or Obtuse in the following degrees: 100°, 110°, 120° and 135° with Internal Diameters of: 3, 4, 4½, 5, 6, 8, 10, 12, 14 and 16 inches.

* Bends supplied with door, available in heavy quality only, extra.
† Can be supplied with socket on branch at small extra charge.
Heavy quality available for solid fuel boilers (first length of pipe should be of cast iron).

DIMENSIONS IN INCHES

Internal Diameter	3	4	4½	5	6	8	10	12	14	16
External Diam. Spigot End	3⅜	4⅜	5	5½	6½	8¾	10¾	13	15	17
Internal Diam. Socket End	3⅝	4⅝	5¼	5¾	6¾	9½	11½	13¾	15¾	17¾
Internal Depth of Socket	2	2½	2¾	3	3½	4	4	4	4	4
Face of socket to centre of spigot (For 90° Bends & Tees)	4⅝	5⅞	6⅝	7¼	8½	10¾	12¼	14	15¾	17½
End of spigot to centre of socket (For 90° Bends & Tees)	4⅝	5⅞	6⅝	7¼	8½	10¾	12¼	14	15¾	17½
Tee Pieces centre to face	4⅝	5⅞	6⅝	7¼	8½	10¾	12¼	14	15¾	17½

ROOM THERMOSTAT

When desired, a Room Thermostat, in addition to boiler thermostat, may be connected in the secondary circuit. The room thermostat, which is graduated from 40° to 80° Fahr., acts independently on control valve in exactly the same way as boiler thermostat. Low Temperature Room Thermostat graduated 30° to 70° Fahr. can be supplied. The Thermostat should be coupled to gas circuit on boiler by copper tubing of the following sizes:

Where the total length of circuit does not exceed 20 ft., $\frac{3}{16}$ in. bore × ·267 in. O.D.

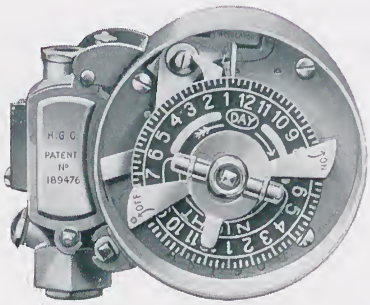
Where the total length of circuit does not exceed 40 ft., $\frac{1}{4}$ in. bore × ·346 in. O.D.

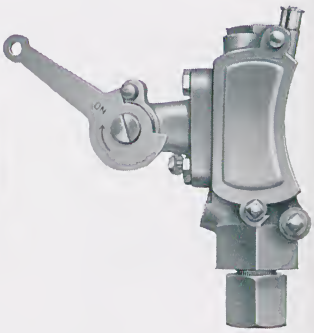
Where 40 to 60 ft. total length of circuit is used, $\frac{3}{8}$ in. iron pipe. Supplied with coupling for $\frac{3}{16}$ in. copper. Couplings for $\frac{1}{4}$ in. copper pipe and $\frac{3}{8}$ in. iron pipe extra.

The $\frac{3}{16}$ in. and $\frac{1}{4}$ in. couplings are for soldered capillary joints.

CLOCK CONTROLLERS

This Clock Controller, which is fitted with a fifteen-day movement, automatically controls the gas supply to the boiler by opening or closing at pre-determined times, which can be either the same on each and every day of the week or varied by the Selective Device and/or Advancing Device referred to later.





CLOCK CONTROLLERS (cont.)

A special hand-lever control can be fitted if it is desired to operate the boiler outside the normal pre-set times. This is achieved by shunting the gas supply through a separate gas cock, as illustrated on page 152. It is essential when this cock has been manually opened it must be manually closed, otherwise the Clock Controller will not function.

Selective Device

If desired, the controller can be provided with this device which prevents operation on one or any number of selected days of the week. Unless ordered to the contrary, it is arranged to miss operation on Sundays only.

Normal Advancing Device

With this device, the "OFF" time can be made earlier or later on one or more days of the week provided this "OFF" time is the same for each selected day.

EXAMPLES

* Earlier "OFF" with selective and advancing devices (Sunday cut-out)		Later "OFF" with selective and advancing devices (Sunday cut-out)	
MONDAY	6 a.m. to 6 p.m.	MONDAY	6 a.m. to 6 p.m.
TUESDAY	6 a.m. to 6 p.m.	TUESDAY	6 a.m. to 6 p.m.
WEDNESDAY	6 a.m. to 6 p.m.	WEDNESDAY	6 a.m. to 8 p.m.
THURSDAY	6 a.m. to 6 p.m.	THURSDAY	6 a.m. to 6 p.m.
FRIDAY	6 a.m. to 6 p.m.	FRIDAY	6 a.m. to 6 p.m.
SATURDAY	6 a.m. to 1 p.m.	SATURDAY	6 a.m. to 6 p.m.
SUNDAY	Off	SUNDAY	Off

* Earlier "ON" times are provided at extra charge.

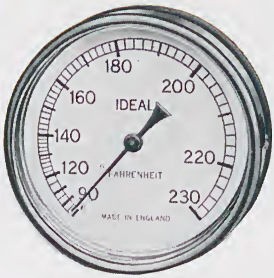
Full schedule of "ON" and "OFF" times must be given when ordering.

All Controllers are fitted with two compression unions for $\frac{3}{16}$ in. bore × ·267 in. O.D. or $\frac{1}{4}$ in. bore × ·346 in. O.D. Copper Tube, or adapters for $\frac{3}{8}$ in. Iron Pipe for fitting in the secondary pipe circuit of the boiler.

Except on the No. 2-GBB Boiler, all Controllers are supplied with a special bracket to facilitate fixing to a wall or other permanent fixture adjacent to the boiler.

Where it is undesirable for the temperature of a building to fall below a certain minimum during the night or weekend, two Room Thermostats should be used in conjunction with a Clock Controller, the Clock Controller being fitted on the tubing between the Boiler Thermostat and the Room Thermostats. No by-pass is necessary.

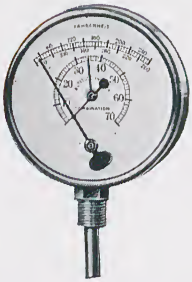
IDEAL DIAL THERMOMETERS



Supplied in both Vertical and Horizontal types, with 2½ in. and 4 in. dial. Provided with removable steel pocket screwed ½ in. gas thread.

These vapour-pressure thermometers are of sound construction and high-class finish and appearance, and their accuracy is guaranteed. The case is finished black with chromium-plated dustproof bezel and bevelled plate-glass front, the dial being white, with black graduations and figures.

ALTITUDE GAUGES



Altitude Gauges

4¾ in. diameter steel case, black stove enamel, graduated to 70 ft. or 150 ft. (state which required).

Supplied screwed ¼ in. gas thread. **¼ in. M and F Control Cock** extra if required.

H.M.O.W. Pattern

6 in. diameter brass case with flanged back, graduated to 70 ft. and 30 lb., 150 ft. and 65 lb. (state which required).

Supplied screwed ⅜ in. gas thread. **⅜ in. Female Control Cock** extra if required.

Combined Altitude Gauge and Thermometer

4¾ in. diameter steel case, black stove enamelled, graduated to 70 ft. or 150 ft. (state which required). Screwed ½ in. gas thread. (**Angle Pattern** graduated to 70 ft. also available).


No. 1.


No. 3.


No. 3A.


No. 4.


No. 4A. (L.H.)


No. 7.


No. 8.


No. 9.

The sockets of these Thermometers are screwed $\frac{1}{2}$ in. gas thread.

No.	Type	Pattern	No.	Type	Pattern
1	Iron Case	Straight	4	Brass Case	Angle
2	,, ,,	Angle	4A	,, ,,	R. or L.H. Angle
1	White Enamelled	Straight	7	,, ,,	Angle
2	,, ,,	Angle	†8	8″ Brass Case, with Revolv. Shield	Straight
3	Plastic Case	Straight			
*3	Brass Case	,,	8	8″ Brass Case, with Revolv. Shield	Angle
*3A	,, ,,	,,	†9	$5\frac{1}{2}$″ H.M.O.W. Brass or Aluminium Case	Straight

* State size and type of boiler and if with or without jacket.

† Has perforated tail. Fitted with $\frac{3}{4}$ in. × $\frac{1}{2}$ in. or 1 in. × $\frac{1}{2}$ in. M.S. well.

M.S. Well $\frac{3}{4}$ in. × $\frac{1}{2}$ in. available for all other patterns. Scale and tube portions for Nos. 3 and 3A Brass Case Thermometers supplied separately.

Ideal 'A1' Spring Safety Valve

Ideal 'B1' Spring Safety Valve

Ideal 'C1' Spring Safety Valve

IDEAL 'A1' SPRING SAFETY VALVE

Size Inches	Suitable for B.T.U. rating	
	Water	Steam
½	Up to 100,000	—
¾	100,000–900,000	Up to 80,000
1	900,000–1,200,000	80,000–160,000
1¼	1,200,000–1,500,000	160,000–260,000
1½	1,500,000–1,800,000	260,000–400,000
2	1,800,000–2,800,000	400,000–700,000
2½	2,800,000–3,800,000	700,000–1,100,000

Tank height or steam working pressure must be specified for both 'A1' and 'B1' valves.

This valve is suitable for use with all hot water heating and domestic supply boilers, also low-pressure steam heating boilers.

Special Features.—Gun-metal throughout, excepting the spring, which is of non-corrosive metal.—Full area discharge.—Seating centralised by quadruple winged guide on spindle. Head of spindle protected against external overloading.—Always supplied with padlock to prevent interference.

IDEAL 'B1' SPRING SAFETY VALVE

The 'B1' Safety Valve is a simplified, lighter pattern of the 'A1' Safety Valve. It is suitable for the smaller hot water heating and domestic supply boilers and a tank height up to 80 ft. maximum. Padlock if required, extra.

IDEAL 'C1' SPRING SAFETY VALVE

Brass body, with Phosphor-bronze Spring and Rubber Seat; and also available with metal to metal Seat. Screwed ½ in., ¾ in. and 1 in. gas thread. These Valves are set to blow off at approximately 32 lb. pressure, but are adjustable within the range of 25–40 lb. Can be supplied for pressures under 25 lb. to special order.

IDEAL DEAD WEIGHT SAFETY VALVES

Supplied in two sizes, ¾ in. and 1 in., and both weighted to 33 lb. pressure approximately. Extra weight to increase resistance by 14 lb. can be supplied if desired at extra cost.

IDEAL & NATIONAL ENCLOSED SAFETY VALVES

NATIONAL ENCLOSED SAFETY VALVES

SPRING PATTERN

No.	Size Inches	Suitable for B.T.U. rating		No.	Size Inches	Suitable for B.T.U. rating	
		Water	Steam			Water	Steam
17	$\frac{1}{2}$	100,000	—	21	$1\frac{1}{2}$	1,800,000	400,000
18	$\frac{3}{4}$	900,000	80,000	22	2	2,800,000	700,000
19	1	1,200,000	160,000	23	$2\frac{1}{2}$	3,800,000	1,100,000
20	$1\frac{1}{4}$	1,500,000	260,000	24	3	Above ,,	1,700,000

Tank height must be specified on order.

DEAD WEIGHT PATTERN

No.	Size Inches	Suitable for Tank Height	Suitable for B.T.U. rating
1	$\frac{3}{4}$	35 Feet	100,000
1A		50 ,,	
1B		70 ,,	
2	$\frac{3}{4}$	60 ,,	450,000
2A		80 ,,	
2B		110 ,,	
X3	1	60 ,,	900,000
X3A		80 ,,	
X3B		110 ,,	
3	1	60 ,,	1,200,000
3A		80 ,,	
3B		110 ,,	
X4	$1\frac{1}{4}$	60 ,,	1,500,000
X4A		80 ,,	
X4B		110 ,,	
4	$1\frac{1}{2}$	60 ,,	1,800,000
4A		80 ,,	
4B		110 ,,	

Valves will be supplied loaded for above tank heights unless otherwise ordered.
All Safety Valves supplied with Padlock unless otherwise ordered.

IDEAL BOILER ACCESSORIES

STEAM GAUGES

Supplied in the following sizes:—4 in. screwed $\frac{3}{8}$ in., registering 0 to 20 lb., and 6 in. screwed $\frac{3}{8}$ in., registering 0 to 20 lb.

STEAM MOUNTINGS

For each No. 3-GBC Series Gas Boiler, complete set comprises Water Gauge, Steam Gauge, Siphon Bottle and Pressure Pilot Valve, together with Safety Valve(s), of the following sizes.

No. 3-GBC-50, $1\frac{1}{2}$ in.
Nos. 3-GBC-60-70, 2 in.
Nos. 3-GBC-80-100, $2\frac{1}{2}$ in.
Nos. 3-GBC-110-130, 2—2 in.

For Britannia Steam Boilers, the set comprises:—Water Gauge, Steam Gauge, Siphon Bottle, 905 Damper Regulator (for hand-fired boilers only), together with Safety Valve(s) and Draw-off Cocks according to the size of the boiler, details of which are as follows:—

Britannia Steam Boilers	Safety Valves	Draw-off Cocks	Britannia Steam Boilers	Safety Valves	Draw-off Cocks
Nos. 250—260K	$1\frac{1}{4}$″	2—$\frac{3}{4}$″	Nos. 3120—3130	$2\frac{1}{2}$″	2—1″
Nos. 270—290K	$1\frac{1}{2}$″	2—$\frac{3}{4}$″	Nos. 4130—4140K	2—2″	2—1″
Nos. 2100—2120	2″	2—$\frac{3}{4}$″	Nos. 4150—4160	2—2″	2—1″
Nos. 350—360K	$1\frac{1}{2}$″	2—1″	Nos. 570K	$2\frac{1}{2}$″	2—1″
Nos. 370—3100K, 470K	2″	2—1″	Nos. 580K—590K	2—2″	2—1″
Nos. 3110K, 480—4120K	$2\frac{1}{2}$″	2—1″	Nos. 5100K—5150	2—$2\frac{1}{2}$″	2—1″

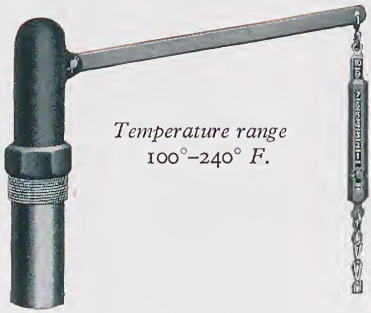
W.D. Test Cock. $\frac{1}{2}$ in. male gas × $\frac{3}{4}$ in. Whitworth.

No. 905 IDEAL DAMPER REGULATOR

For Steam pressures up to 15 lb.

The Regulator incorporates a sensitive metallic bellows enclosed in cast-iron case, screwed $\frac{3}{4}$ inch. $1\frac{1}{2}$ inch brass bushing and siphon pipe for fixing included.

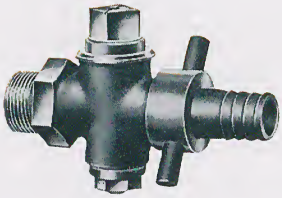
No. 802 IDEAL DAMPER REGULATOR

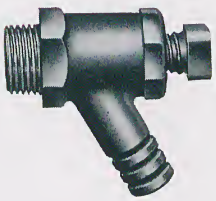


This Regulator, screwed 1½ in., is made entirely of metal and comprises: A cast-iron element case which screws into the Boiler, a flexible metallic bellows element, and a cast-iron head containing the spindle and return spring. As the cast-iron head can be unscrewed from the element case, replacement of the bellows element does not entail emptying the installation. (Descriptive pamphlet sent on request).

When supplied for bower-barffed boilers an extra charge is made for brass element case and/or brass water bottle.

DRAW-OFF COCKS AND PLUGS





Draw-off Cocks are screwed ½, ¾ and 1 inch and Draw-off Plugs with fixed hose connection are screwed ½ inch.

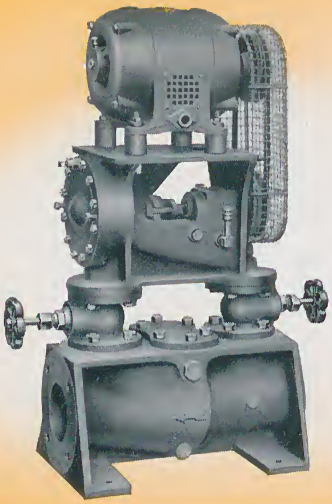
Gland Packed Draw-off Cocks are also available on order.

IRON CEMENT

An Iron Cement made in powder form for repairing leaks or breaks in castings and for making connections in steam or hydraulic work. Supplied in 8 lb. tins.

WHITE PIPE CEMENT

For making tight joints with steam, water or gas pipes, tanks, etc., and is ready for use, supplied in 1 lb. tins.



Criton Accelerator

"F.H." Centrifugal Pump

CRITON ACCELERATORS

The "Criton" embodies the latest ideas in accelerator design including:

Easy change-over to and from full-bore gravity flow.
Positive isolation of pump.
Specially designed stainless steel impeller shaft.
Ring lubricated main bearing.
Highest possible efficiency.
Economy in first cost and floor space.
No mal-alignment troubles.
No by-pass piping, isolation valves or non-return valves to be separately bought and fixed.
One operation installs everything: the "Criton" Accelerator is as easy to fix as a length of pipe.
No special foundation necessary.

Descriptive booklet sent on request.

ESTIMATES

When applying for Estimates the following particulars should be furnished:

(1) Rate of circulation desired in gallons per minute.

(2) Frictional head in feet when flow is as above. (NOT height of expansion tank above boiler).

ESTIMATES (cont.)

(3) Size of main pipe into which the Criton will be fitted.

(4) Particulars of electrical supply (which should be verified with the Electricity Board before ordering):

(*a*) If A.C. state voltage, whether 1, 2 or 3 phase, and periodicity.

(*b*) If D.C. state voltage.

(5) Any special requirements as to motors or switchgear.

(6) Whether Commercially Silent Motor (for factory, warehouse, etc.) or Super Silent Motor, available for 3 phase supply only (for church, hospital, school, private house, etc.) is required.

(7) If rate of circulation and frictional head cannot be given, state B.T.U. or Total Heating Surface in sq. ft.

(8) **IMPORTANT.—The valves are fitted as illustrated unless otherwise ordered. If required on right or left-hand side when facing delivery end of set, specify on order.**

(9) Any other requirements.

"F.H." CENTRIFUGAL PUMP

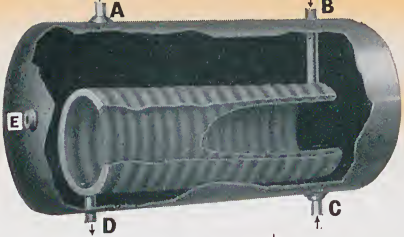
The "F.H." 1½ in. Type Centrifugal Pump is designed to meet the need for an efficient accelerator on small heating systems or in individual circuits in larger systems where the circulation is poor.

Characteristics. Though smaller in size, the pump is of the same robust construction as the Criton Accelerator and has a similar cast-iron pump casing and gun-metal impeller of correct hydraulic design to ensure the highest efficiency.

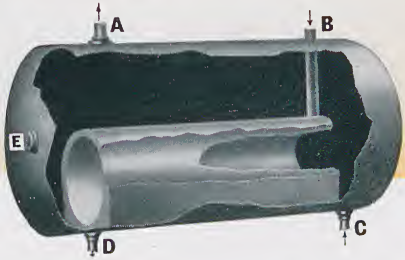
Spindle. The spindle is of rustless steel, presenting a good hard surface to the packing in the stuffing box, and is supported by a long gun-metal neck bush in the pump and an external ring-lubricated bearing.

Motor. A horizontal motor of standard design is carried on a platform above the pump. The pulley can be varied in size to give different outputs.

Arrangement. The set is arranged for insertion in a straight length of main, offering little resistance to natural circulation.
By adjusting the trunnion nuts, the whole of the rotating portion can be drawn towards the suction side to seal off the stuffing box and allow the packing to be changed without the provision of any shut-off valves on the main.



Nos. 00*C*, 0*C*, 1*C*, 2*C*.



Nos. 10, 11, 12.

COPPER				GALVANISED STEEL						
Body & Head 20G. Bottom 17G. (No. 00C Body 22G. Head 20G. Bottom 18G.)				Body and Head 14G. Bottom 12G. (No. 00 14G.)				$\frac{1}{8}$ in. Plate throughout		
No.	Nominal Net Capacity Gal.	Test & Working Pressures in lb. per sq. in. T	W	No.	Nominal Net Capacity Gal.	Test & Working Pressures in lb. per sq. in. T	W	Nominal Net Capacity Gal.	Test & Workin Pressures in lb. per sq. in. T	W
00C	20	25	15	00	20	30	20	—	—	—
0C	25	25	15	10	24	40	20	24	60	30
1C	27½	25	15	11	27½	40	20	27½	60	30
2C	35	25	15	12	35	40	20	35	60	30

The following can be provided as required: Bolted Heads for all above, Galvanised Cantilever Brackets to build into brickwork.

Extra tappings can be provided in the following sizes for electric immersion heaters, etc., $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, 2 and $2\frac{1}{4}$ inches.

Indirect Cylinders to B.S.S. 1565 and 1566 can also be supplied.

	POSITION OF CONNECTIONS			
Connections	Nos. 00C, 0C, 1C and 2C Horizontal	Vertical	Nos. 00, 10, 11 and 12 Horizontal	Vertical
Primary Flow	B (male)	D (male)	B (male)	D (female)
„ Return	D „	B „	*D (female)	B (male)
Secondary Flow	A (female)	E (female)	A „	E (female)
† „ Return	E „	A „	E „	A „
Cold Water Feed	C „	C „	C „	C „

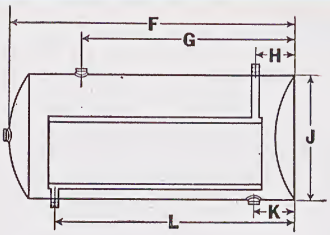
* No. 00 connection D is male.

† This connection not provided on Nos. 00 and 00C.

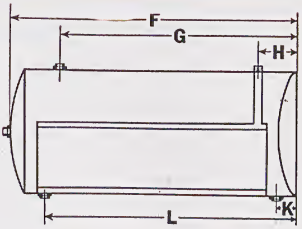
Throttle Valves for use with Ideal Indirect Cylinders, page 191.

IDEAL INDIRECT CYLINDERS

Vertical and Horizontal.



Nos. 00C, 0C, 1C, 2C, (Copper)
No. 00 (Galv)

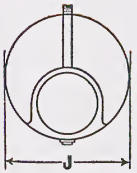


Nos. 10, 11, 12, (Galv)

DIMENSIONS IN INCHES

COPPER

No.	F	G	H	J	K	L
00C	35	—	5½	15	5½	25
0C	31¼	22	5½	18	5½	25
1C	34¾	27	5½	18	5½	29½
2C	42	32	6	18	6	36



Nos. 10, 11, 12

GALVANISED

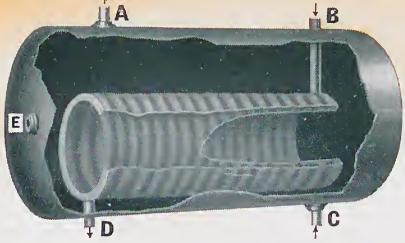
No.	F	G	H	J	K	L
00	35	—	5½	15	5½	24½
10	30	22	5½	18	3	25
11	34¾	27	5½	18	3	29½
12	42	32	6	18	3	36

Nos. 00C and 00—two 1 in. heater connections; two ¾ in. tappings. If required for use in horizontal position this must be stated when ordering.
Nos. 0C, 1C, 10 and 11—two 1 in. heater connections; three 1 in. tappings.
Nos. 2C and 12—two 1¼ in. heater connections; three 1¼ in. tappings.

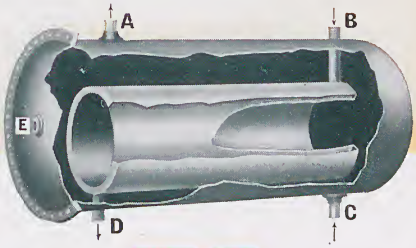
IDEAL STORAGE CYLINDERS

Copper and Galvanised. Vertical or Horizontal.

Nom. Nett Capacity Gal.	Type	Gauge	Tappings	Test Pressure
20	Galv. Steel 36″ × 15″	14	4—1 in.	25 lb.
30	Galv. Steel 30″ × 18″	14	5—1 in.	25 lb.
20	Copper 36″ × 15″	22 body and top, 18 bottom	4—1 in.	20 lb.
30	Copper 36″ × 18″	22 body and top, 18 bottom	4—1 in.	17½ lb.
30	Copper 36″ × 18″	20 body and top, 17 bottom	4—1 in.	25 lb.
40	Copper 42″ × 18″	22 body and top, 18 bottom	4—1 in.	17½ lb.
40	Copper 42″ × 18″	20 body and top, 17 bottom	4—1 in.	25 lb.



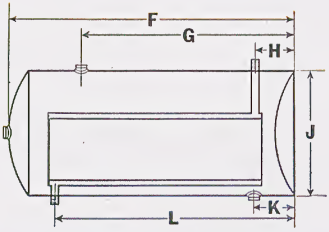
COPPER



GALVANISED

POSITION OF CONNECTIONS

Connections	Horizontal	Vertical
Primary Flow (male thread)	B	D
,, Return ,, ,,	D	B
Secondary Flow (female thread)	A	E
,, Return ,, ,,	E	A
Cold Water Feed	C	C



DIMENSIONS IN INCHES

No.	F	G	J	Nos. 3 to 8 H	Nos. 3 to 8 K	Nos. 3 to 8 L	Nos. 3C to 8C H	Nos. 3C to 8C K	Nos. 3C to 8C L	Tapping and Heater Connections
3 & 3C	50	39	20	5	5	39	7	7	40	$1\frac{1}{2}$
4 & 4C	58	45	20	5	5	45	7	7	46	$1\frac{1}{2}$
5 & 5C	54	41	24	6	6	$43\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$	42	2
6 & 6C	69	53	24	6	6	$58\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$	$56\frac{1}{2}$	2
7 & 7C	$65\frac{1}{2}$	50	30	6	6	54	9	9	$54\frac{1}{2}$	$2\frac{1}{2}$
8 & 8C	$76\frac{1}{2}$	59	32	7	7	$65\frac{1}{2}$	9	9	61	3

IDEAL INDIRECT CYLINDERS

Vertical and Horizontal.

GALVANISED INDIRECT CYLINDERS

No.	* Nominal Net Capacity	†Heating Surface	Test and Working Pressures in lb. per sq. in.			
			$\frac{1}{8}$ in. Plate		$\frac{3}{16}$ in. Plate	
	Gal.	Sq. ft.	T	W	T	W
3	50	$17\frac{1}{2}$	60	30	80	40
4	60	$20\frac{1}{2}$	60	30	80	40
5	80	$27\frac{1}{2}$	46	23	66	33
6	100	35	46	23	66	33
7	150	52	36	18	56	28
8	200	70	30	15	50	25

Indirect Cylinders to B.S.S. 1565 can also be supplied.

COPPER INDIRECT CYLINDERS

No.	* Nominal Net Capacity	†Heating Surface	30 lb. test suitable for 18 lb. working pressure		50 lb. test suitable for 30 lb. working pressure	
			Gauge		Gauge	
	Gal.	Sq. ft.	Body & Top	Bottom	Body & Top	Bottom
3C	50	$17\frac{1}{2}$	18	16	16	14
4C	60	$20\frac{1}{2}$	18	16	16	14
5C	80	$27\frac{1}{2}$	16	14	14	12
6C	100	35	16	13	14	12
7C	150	52	14	12	12	10
8C	200	67	14	11	12	9

Indirect Cylinders to B.S.S. 1566 can also be supplied.

* Also approximate hourly capacity raised through 100°. Extra heating surface may be required where long secondary circulations are fixed.

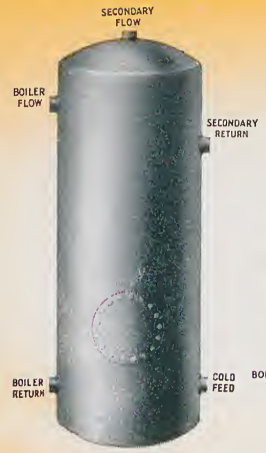
† For Water to Water Heating. Cylinders for Steam to Water Heating quoted for against specification.

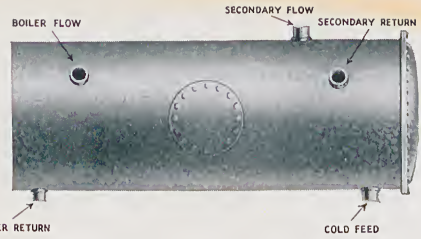
Galvanised Cylinders include bolted head complete with India-rubber Jointing Ring.

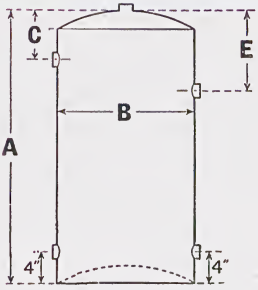
Copper Cylinders are supplied with fixed ends unless otherwise ordered. Cylinders with coil or other form of heater can be supplied.

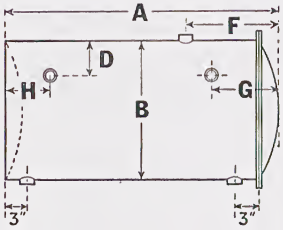
Bolted head and manhole, if required, can be provided, extra.

Extra tappings can be provided in the following sizes for electric immersion heaters, etc., $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, 2, $2\frac{1}{4}$, $2\frac{1}{2}$ and 3 inches.









DIMENSIONS IN INCHES

No.	Nominal Capacity Gallons	A	B	C	D	E	F	G	H	Tappings
50	30	33	18	7	$2\frac{1}{2}$	11	12	9	6	1
51	40	42	18	7	$2\frac{1}{2}$	14	12	9	6	$1\frac{1}{4}$
52	50	42	20	7	3	14	12	9	6	$1\frac{1}{4}$
53	60	51	20	7	3	17	12	9	6	$1\frac{1}{4}$
54	75	48	24	$7\frac{1}{2}$	$3\frac{1}{2}$	16	$12\frac{1}{2}$	$9\frac{1}{2}$	$6\frac{1}{2}$	$1\frac{1}{2}$
55	100	63	24	$7\frac{1}{2}$	$3\frac{1}{2}$	21	$12\frac{1}{2}$	$9\frac{1}{2}$	$6\frac{1}{2}$	$1\frac{1}{2}$
56	125	60	27	8	4	20	13	10	7	$1\frac{1}{2}$
57	150	60	30	8	$4\frac{1}{2}$	20	13	10	7	2
58	200	72	32	$8\frac{1}{2}$	$4\frac{3}{4}$	24	$13\frac{1}{2}$	$10\frac{1}{2}$	$7\frac{1}{2}$	$2\frac{1}{2}$

GALVANISED STORAGE CYLINDERS

Vertical or Horizontal Storage Cylinders

Unless otherwise ordered, these cylinders are furnished with five tappings and 8 in. manhole.

When ordering please state:

Vertical or Horizontal pattern.
Fixed or Bolted Head.
If larger manhole required, state size.
Any variation of sizes or positions of tappings.

Cylinders with bolted head, include India-rubber Jointing Ring.
Cylinders can be supplied in $\frac{1}{8}$ in. and $\frac{3}{16}$ in. plate.
Large cylinders or special sizes on application.

GALVANISED EXPANSION TANKS

No.	Nominal Capacity Gal.	Dimensions in Inches			B.S.S. 417/1951	
		Length	Width	Depth	Grade A Gauge	Grade B Gauge
*19	4	19	6	11	16	18
*20	7	18	9	12	16	18
21	10	18	12	12	16	18
22	15	24	12	15	16	18
23	20	24	16	15	16	18
24	25	24	17	17	16	18
25	30	24	18	19	16	16
26	40	24	24	19	16	16
27	50	29	22	22	14	16
28	70	36	24	23	14	16

* Not covered by B.S.S. 417/1951.

Special sizes on application.

BALL VALVES

Supplied with Backnut and Union in the following sizes: $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{3}{4}$ inches.

'IDEAL-EETO' CYLINDER JACKET

Every hot water installation, unless covered with effective insulating material, dissipates and wastes heat from the surface of pipes and hot water cylinder or tank. This wastage of Heat means wastage of Fuel. The insulating jackets shown will reduce this fuel wastage to a minimum, considerably lowering the cost of obtaining hot water.

The 'Ideal-Eeto' jacket, being made in sections, is suitable for all types and sizes of Cylinders, Indirect Cylinders, and Square or Rectangular Tanks, as details given below:—

'Ideal-Eeto' jackets are supplied in the following qualities:—

1½″ thick wool, brown calico finish.
1½″ „ „ cream glazed calico finish.
1″ „ spun glass brown calico finish.
1″ „ „ „ cream glazed calico finish.
1″ „ „ „ cream plastic finish.

1½″ thick wool suitable for all cylinders and tanks. ¾″ spun glass calico finish suitable for cylinders only.

1″ spun glass plastic finish, suitable for vertical fixed-head cylinders only.

CIRCULAR END PADS

Circular end pads can be supplied for Cylinders fitted in horizontal position in all finishes except 1 in. Spun Glass Cream Plastic finish.

If horizontal cylinder is fitted on brackets or supports, sketch showing size and position of the supports must be sent with order.

HESSIAN BACKED HAIR FELT

Supplied in rolls 8 yards long with felt 4 inches wide, ½ inch thick hessian-backed corrugated felt with 1 inch overlap.

IDEAL PLASTIC COMPOUNDS

For covering boilers, tanks and pipes. These compounds can be applied to either warm or cold surfaces, although a warm surface is preferable. First put on a thin spotting coat; after this is well set and nearly all moisture evaporated, apply a second rough coat, finishing off with a third smooth coat.

Ideal Plastic Asbestos

Covering capacity approximately 36 sq. ft., 1 inch thick per 112 lb. Supplied in 112 lb. and 56 lb. bags.

Ideal 85% Magnesia Plastic Covering

Covering capacity approximately 60 sq. ft., 1 inch thick per 56 lb. Supplied in 56 lb. bags only.

IDEAL BOILER CEMENT

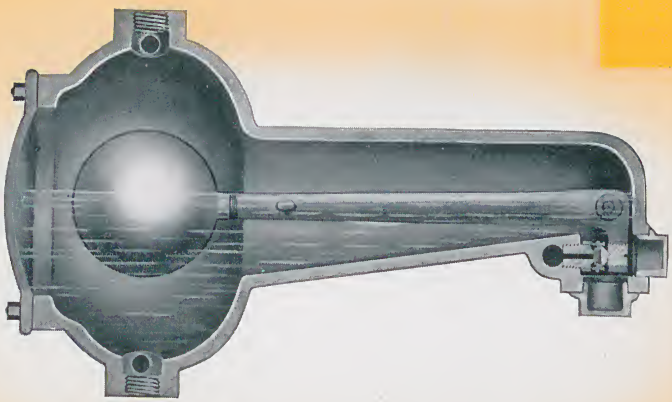
For rendering boilers, smokepipe, etc., smoketight.
Supplied in Nos. 2, 3 and 4 size tins.

IDEAL SECTIONAL PIPE COVERING

85% Magnesia 1 inch thick

Canvas backed and complete with metal fixing bands. Supplied in sections 3 ft. long for all sizes ½ in. to 4 in. of M.S. and D.W.S. Copper Pipes; also supplied for Bends, Tees, Elbows and Crosses.

Available in 85% Magnesia sections 1 in. thick and Spun Glass sections ½ in. thick.



Sectional view showing immersed valve.

The Ideal Boiler Feeder is provided with tappings on both sides for water gauge, to permit of installation on either side of the boiler. The Feeder should not be used on installations where the steam pressure exceeds 20 lb. or the water pressure 35 lb. To maintain a constant pressure it is advisable that the supply should always be taken from a tank.

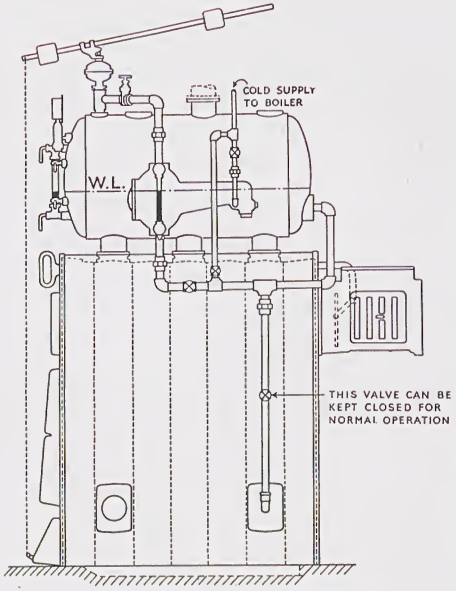
DIMENSIONS IN INCHES

Length Overall	Height Overall	Width Overall	Boiler Connections	Gauge	Feed Water Inlet
$24\frac{1}{8}$	$13\frac{1}{4}$	$7\frac{13}{16}$	1	$\frac{1}{2}$	$\frac{1}{2}$

Water Gauge Fittings are available if required at an extra charge.

IDEAL AUTOMATIC BOILER FEEDER

With Immersed-Valve

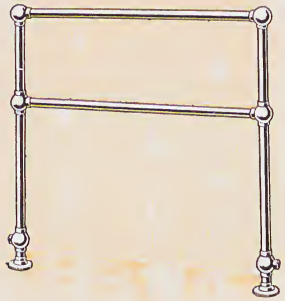


DIRECTIONS FOR FIXING

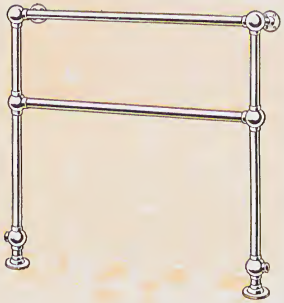
Fix the Feeder at such height that the letters—W.L.—cast on body coincide with the water-level indicated on Steam Drum.

Screw the brass bushing and siphon pipe supplied with the Damper Regulator into the top of a 1½ in. by 1 in. tee. The 1 in. branch of tee should then be connected with the top opening in the large end of the feeder. Then make the feed-water connection with small end of Feeder, and provide a by-pass, all as shown in diagram. Take care to ascertain that the water-supply pressure exceeds the highest steam pressure under which boiler will at any time operate.

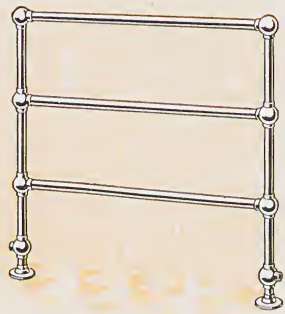
If after Boiler has been filled and Feeder is in operation it is found that water-level in drum is either too high or too low, unscrew brass cap at back and turn adjusting screw with a screwdriver to right to make water-level lower, or to left to make it higher.



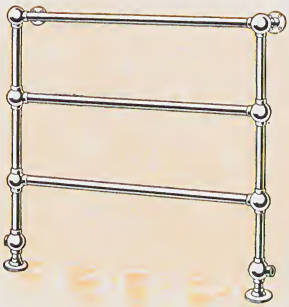
No. 0



No. 0A
with wall-supports



No. 1



No. 1A
with wall-supports

AIR TESTED TO 80 LB. SUBMERGED IN HOT WATER

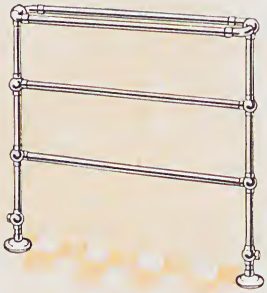
Connections provided facing inwards at no extra charge.

Floor to centre of tappings, 4 in.
Wall to centre of rails, Nos. 0A and 1A, 6 in.
Diameter of floor flanges 1 in. and $1\frac{1}{4}$ in. tube, $3\frac{5}{8}$ in.; $1\frac{1}{2}$ in. tube, $3\frac{7}{8}$ in.
Diameter of wall plates, 3 in.
Tappings, $\frac{3}{4}$ in. unless otherwise ordered.
Fitted with flush airvent, see page 181.

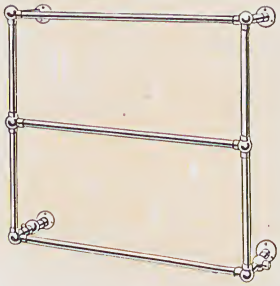
IDEAL TOWEL RAILS

Solid-drawn Brass—Chromium-plated on Nickel.

No.	Diam. of Tube	Height to Centre of Top Tube Ft. in.	Length Centre to Centre of Tubes Ft. in.	Prices—Chromium-plated 18 gauge £ s. d.	16 gauge £ s. d.
No. 0	1″	3 0	2 6	6 10 0	7 5 0
		3 0	3 0	6 14 0	7 10 0
		3 0	3 6	6 18 0	7 15 0
No. 0	1¼″	3 0	2 6	7 7 0	8 3 0
		3 0	3 0	7 12 0	8 9 0
		3 0	3 6	7 17 0	8 15 0
No. 0A	1″	3 0	2 6	7 16 0	8 12 0
		3 0	3 0	8 0 0	8 17 0
		3 0	3 6	8 4 0	9 2 0
No. 0A	1¼″	3 0	2 6	8 9 0	9 6 0
		3 0	3 0	8 14 0	9 12 0
		3 0	3 6	8 19 0	9 18 0
No. 1	1″	3 0	2 6	8 5 0	9 4 0
		3 0	3 0	8 11 0	9 12 0
		3 0	3 6	8 17 0	10 0 0
No. 1	1¼″	3 0	2 6	9 4 0	10 3 0
		3 0	3 0	9 11 0	10 12 0
		3 0	3 6	9 18 0	11 1 0
No. 1	1½″	3 0	2 6	12 12 0	13 16 0
		3 0	3 0	13 1 0	14 8 0
		3 0	3 6	13 10 0	15 0 0
No. 1A	1″	3 0	2 6	9 6 0	10 6 0
		3 0	3 0	9 12 0	10 14 0
		3 0	3 6	9 18 0	11 2 0
No. 1A	1¼″	3 0	2 6	10 4 0	11 4 0
		3 0	3 0	10 11 0	11 13 0
		3 0	3 6	10 18 0	12 2 0
No. 1A	1½″	3 0	2 6	13 11 0	14 17 0
		3 0	3 0	14 0 0	15 9 0
		3 0	3 6	14 9 0	16 1 0

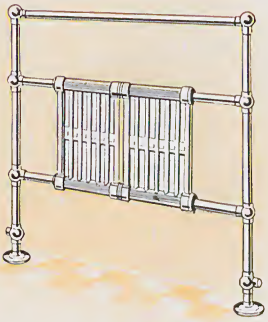


No. 2

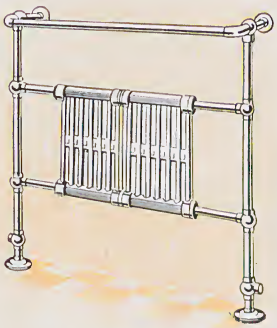


No. 4A

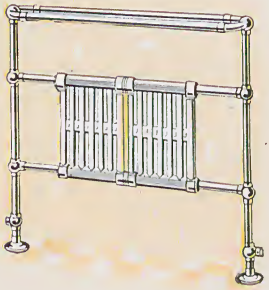
No. 4 is without centre rail



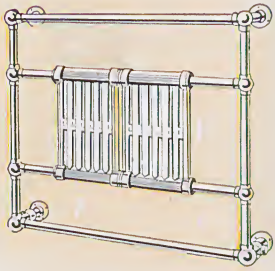
Nos. 13A & 13B



Nos. 19A & 19B



Nos. 23A & 23B



Nos. 24A & 24B

IDEAL TOWEL RAILS

Solid-drawn Brass—Chromium-plated on Nickel

No.	Diam. of Tube	Height to Centre of Top Tube Ft. in.	Length Centre to Centre of Tubes Ft. in.	Prices—Chromium-plated 18 Gauge £ s. d.	16 Gauge £ s. d.
2	1¼″	3 0	2 6	12 11 0	13 13 0
		3 0	3 0	13 1 0	14 5 0
		3 0	3 6	13 11 0	14 17 0
4	1″	2 0	3 0	8 0 0	8 17 0
		2 6	3 0	8 4 0	9 2 0
4	1¼″	2 0	3 0	8 13 0	9 11 0
		2 6	3 0	8 18 0	9 17 0
4A	1″	2 0	3 0	9 13 0	10 14 0
		2 6	3 0	9 17 0	10 19 0
4A	1¼″	2 0	3 0	10 9 0	11 10 0
		2 6	3 0	10 14 0	11 16 0

No.	Diam. of Tube	Height to Centre of Top Tube Ft. in.	Length Centre to Centre of Tubes Ft. in.	Heating Surface Sq. ft.	Prices ‡ Chromium-plated £ s. d.
13A	1¼″	3 0	2 6	10·0	14 17 0
		3 0	3 0	10·5	15 7 0
		3 0	3 6	11·0	15 17 0
†13B	1¼″	3 0	2 6	10·0	16 12 0
		3 0	3 0	10·5	17 2 0
		3 0	3 6	11·0	17 12 0
19A	1¼″	3 0	2 6	10·4	17 0 0
		3 0	3 0	10·9	17 10 0
		3 0	3 6	11·4	18 0 0
†19B	1¼″	3 0	2 6	10·4	18 15 0
		3 0	3 0	10·9	19 5 0
		3 0	3 6	11·4	19 15 0
23A	1¼″	3 0	2 6	11·0	18 10 0
		3 0	3 0	11·7	19 3 0
		3 0	3 6	12·2	19 16 0
†23B	1¼″	3 0	2 6	11·0	20 5 0
		3 0	3 0	11·7	20 18 0
		3 0	3 6	12·2	21 11 0
24A	1¼″	2 6	3 0	11·5	18 12 0
†24B	1¼″	2 6	3 0	11·5	20 7 0

† Sections Bower-barffed. ‡ Radiator sections, silver cellulose sprayed.

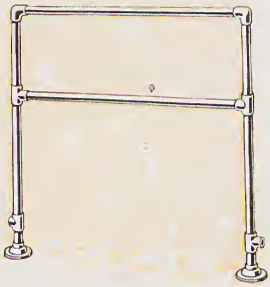
AIR TESTED TO 80 LB. SUBMERGED IN HOT WATER

Connections provided facing inwards at no extra charge.

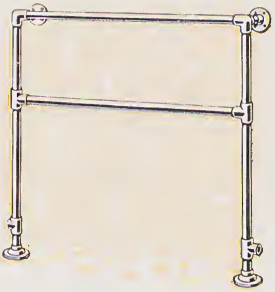
Diam. of Floor flanges — 3⅝″
Diam. of Wall plates — 3″
Floor to centre of tappings:—
Nos. 2, 13, 19 & 23 — 4″
Outside width of Top Tubes:—
Nos. 2 & 23A & B — 6¾″.
Wall to centre of Tubes:—
Nos. 4, 4A & 24A & B — 6″.

Wall to centre of tappings:—Nos. 4, 4A & 24A & B—2¾″. Nos. 19A & B—4¼″.

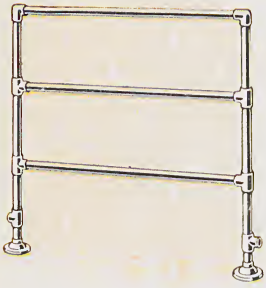
Tappings, ¾″ unless otherwise ordered. Fitted with flush airvent, see page 181.



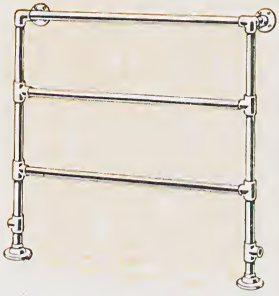
No. P-0



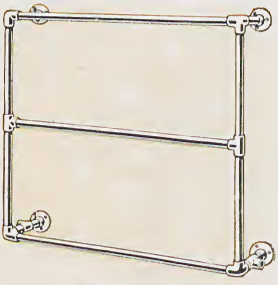
No. P-0A
with wall-supports



No. P-1



No. P-1A
with wall-supports



No. P-4A
No. P4 is without centre rail

No. P-11

IDEAL TOWEL RAILS

Solid-drawn Brass—Chromium-plated on Nickel

No.	Diam. of Tube	Height to Centre of Top Tube Ft. in.	Length Centre to Centre of Tubes Ft. in.	Prices—Chromium-plated 18 Gauge £ s. d.	16 Gauge £ s. d.
P-0	1″	3 0	2 6	5 17 0	6 13 0
		3 0	3 0	6 1 0	6 18 0
		3 0	3 6	6 5 0	7 3 0
P-0	1¼″	3 0	2 6	6 16 0	7 10 0
		3 0	3 0	7 1 0	7 16 0
		3 0	3 6	7 6 0	8 2 0
P-0A	1″	3 0	2 6	7 1 0	7 18 0
		3 0	3 0	7 5 0	8 3 0
		3 0	3 6	7 9 0	8 8 0
P-0A	1¼″	3 0	2 6	8 1 0	8 16 0
		3 0	3 0	8 6 0	9 2 0
		3 0	3 6	8 11 0	9 8 0
P-1	1″	3 0	2 6	7 4 0	8 3 0
		3 0	3 0	7 10 0	8 11 0
		3 0	3 6	7 16 0	8 19 0
P-1	1¼″	3 0	2 6	8 7 0	9 6 0
		3 0	3 0	8 14 0	9 15 0
		3 0	3 6	9 1 0	10 4 0
P-1A	1″	3 0	2 6	8 5 0	9 5 0
		3 0	3 0	8 11 0	9 13 0
		3 0	3 6	8 17 0	10 1 0
P-1A	1¼″	3 0	2 6	9 10 0	10 10 0
		3 0	3 0	9 17 0	10 19 0
		3 0	3 6	10 4 0	11 8 0
P-4	1″	2 0	3 0	7 7 0	8 5 0
		2 6	3 0	7 11 0	8 10 0
P-4	1¼″	2 0	3 0	8 8 0	9 6 0
		2 6	3 0	8 13 0	9 12 0
P-4A	1″	2 0	3 0	8 15 0	9 16 0
		2 6	3 0	8 19 0	10 1 0
P-4A	1¼″	2 0	3 0	9 18 0	10 19 0
		2 6	3 0	10 3 0	11 5 0
†P-11	1″	—	3 0	3 11 0	—
†P-11	1¼″	—	3 0	3 18 0	—

† Connections provided through wall plates. Outside connections, if required, extra.

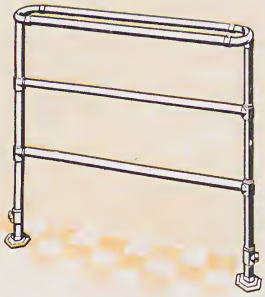
AIR TESTED TO 80 LB. SUBMERGED IN HOT WATER

Connections provided facing inwards at no extra charge.

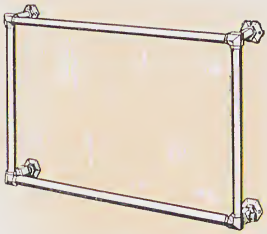
Diam. of Floor flanges — 3⅝″
Diam. of Wall plates — 3″
Floor to centre of tappings— 4″

Wall to centre of tubes:—
Nos. P-0A, P-1A, P-4, P-4A, & P-11—6″
Wall to centre of tappings:—
Nos. P-4 and P-4A—2¾″.

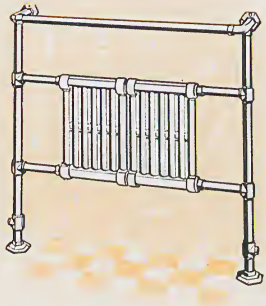
Tappings, ¾″ unless otherwise ordered. Fitted with flush airvent, see page 181.



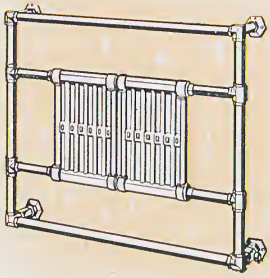
No. H-2



No. H-4
No. H-4A has centre rail



Nos. H-19A & H-19B



Nos. H-24A & H-24B

No. H-11

IDEAL TOWEL RAILS

Solid-drawn Brass—Chromium-plated on Nickel

No.	Size of Tube	Height to Centre of Top Tube Ft. in.	Length Centre to Centre of Tubes Ft. in.	Prices—Chromium-plated £ s. d.
H-1	1¼″	3 0	2 6	18 17 0
		3 0	3 0	19 10 0
		3 0	3 6	20 3 0
H-1A	1¼″	3 0	2 6	21 3 0
		3 0	3 0	21 16 0
		3 0	3 6	22 9 0
H-2	1¼″	3 0	2 6	27 4 0
		3 0	3 0	28 1 0
		3 0	3 6	28 18 0
H-4	1¼″	2 0	3 0	18 15 0
		2 6	3 0	19 4 0
H-4A	1¼″	2 0	3 0	22 3 0
		2 6	3 0	22 12 0

No.	Size of Tube	Height to Centre of Top Tube Ft. in.	Length Centre to Centre of Tubes Ft. in.	Heating Surface Sq. ft.	Prices Chromium-plated £ s. d.
H-13A	1¼″	3 0	2 6	10·4	26 17 0
		3 0	3 0	10·9	27 10 0
†H-13B	1¼″	3 0	2 6	10·4	28 12 0
		3 0	3 0	10·9	29 5 0
H-19A	1¼″	3 0	2 6	10·7	31 7 0
		3 0	3 0	11·3	32 0 0
†H-19B	1¼″	3 0	2 6	10·7	33 2 0
		3 0	3 0	11·3	33 15 0
H-23A	1¼″	3 0	2 6	12·0	36 8 0
		3 0	3 0	12·7	37 5 0
†H-23B	1¼″	3 0	2 6	12·0	38 3 0
		3 0	3 0	12·7	39 0 0
H-24A	1¼″	2 6	3 0	12·3	33 16 0
†H-24B		2 6	3 0	12·3	35 1 0

No.	Size of Tube	Length Centre to Centre of Tubes Ft. in.	Price—Chromium-plated 18 Gauge £ s. d.
†H-11	1¼″	3 0	5 13 0

† Sections Bower-barffed. Radiator sections silver cellulose sprayed.

‡ Connections provided through wall plates. Outside connections, if required, extra.

AIR TESTED TO 80 LB. SUBMERGED IN HOT WATER

Connections provided facing inwards at no extra charge.

Width of Floor flanges — 3¾″

Floor to centre of tappings:—
Nos. H-1 to 2, H-13A to H-19A, H-23A and H-23B. 4″

Wall to centre of tappings:—
Nos. H-4, H-4A, H-24A, H-24B—2¾″
Nos. H-19A, H-19B—4½″.

Width of Wall plates—3″

Outside width of top rails:—
Nos. H-2, H-23A, & H-23B—6⅞″.

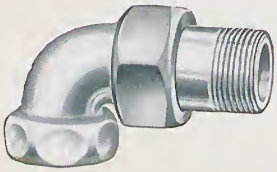
Wall to centre of tubes:—
Nos. H-1A, H-4 & H-4A, H-11, H-24A & H-24B 6″

Tappings, ¾″ unless otherwise ordered. Fitted with flush airvent, see page 181.

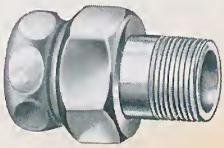
VALVES AND UNIONS FOR USE WITH IDEAL TOWEL RAILS

No. 51 H.P. (C.P.)
No. 51 (Cast Gun-metal) **(C.P.)**

No. 56 H.P. (C.P.)
No. 56 (Cast Gun-metal) **(C.P.)**



No. 57 H.P. (C.P.)
No. 57 (Cast Gun-metal) **(C.P.)**

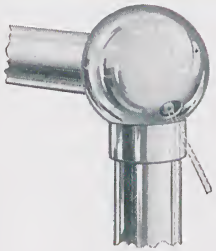


No. 59 H.P. (C.P.)
No. 59 (Cast Gun-metal) **(C.P.)**

EASY-CLEAN TOWEL RAIL VALVE

For sweating into Towel Rail Tubes when required.

Size of Tube	1 inch	1¼ inch	1½ inch
Round	36/-	43/6	51/-
Hexagonal	—	63/-	—



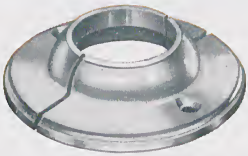
IDEAL FLUSH AIRVENT

Ideal Towel Rails are fitted with this flush airvent, which eliminates projecting aircock and gives a neat appearance.

WALL STAYS

Round or Hexagonal Tube, Chromium-plated on Nickel.
To give distances up to 8 in. from wall to centre of tube.
When ordering, state distance required.

Size of Tube	1 inch	1¼ inch	1½ inch
Round per pair	29/-	29/-	34/6
Hexagonal „ „	—	57/6	—



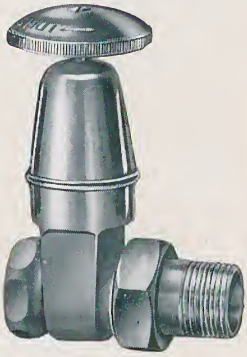
SPLIT FLOOR FLANGES

Chromium-plated on Nickel, to fit round pipe connections to Ideal Towel Rails.

Flanges, Round, for ½ inch pipe. PRICE **4/9** each.
Flanges, Round, for ¾ inch pipe. PRICE **5/6** each.
Flanges, Round, for 1 inch pipe. PRICE **9/-** each.

No. 51 Easy-Clean
(Cast Gun-metal)

No. 51 H.P. Easy-Clean
(Hot pressed brass)



No. 56 Easy-Clean
(Cast Gun-metal)

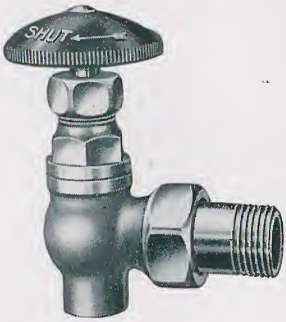
No. 56 H.P. Easy-Clean
(Hot pressed brass)

All patterns illustrated above available with Lock Shields. Dust Caps supplied for Lock Shield Valves at extra charge.

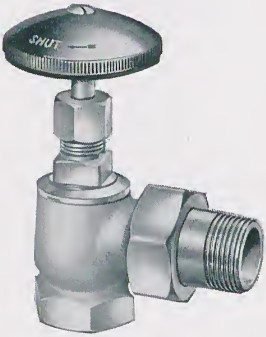
Also available in Polished and Polished-and-Chromium-plated Finishes.

For sizes available, see page 185.

No. 50
(Cast Gun-metal)



No. 50 C.F.
(Cast Gun-metal)
Female Copper to Male Iron



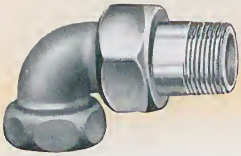
No. 50 H.P.
(Hot pressed brass)

No. 53 (Iron wheel)
No. 55 (Cast Gun-metal)
No. 55 H.P. (Hot pressed brass)

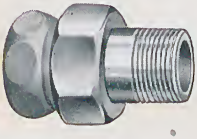
All patterns except No. 53 available with Lock Shields.
Dust Caps supplied for Lock Shield Valves at extra charge.
Also available in Polished and Polished-and-Chromium-plated Finishes.

For sizes available, see page 185

IDEAL RADIATOR UNIONS



No. 57 (Cast Gun-metal)
No. 57 H.P. (Hot pressed brass)



No. 59 (Cast Gun-metal)
No. 59 H.P. (Hot pressed brass)

IDEAL GATE VALVES

No. 52 (Iron wheel)
No. 54 (Cast Gun-metal)

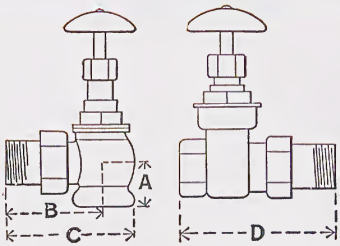
No. 52 H.P. (Iron wheel)
No. 54 H.P. (Hot pressed brass)

Nos. 54 and 54 H.P. available with Lock Shields
Dust Caps supplied for Lock Shield Valves at extra charge

Also available in Polished and Polished-and-Chromium-plated Finishes.

For sizes available see page 185.

DIMENSIONS OF VALVES & UNIONS



Size, inches		½	¾	1	1¼	1½	2	2½
No. 50	A	1	1 1/4	1 3/8	1 5/8	—	—	—
	B	2 7/16	2 11/16	2 15/16	3 1/2	—	—	—
	C	2 15/16	3 3/8	3 3/4	4 7/16	—	—	—
No. 50 H.P.	A	7/8	1 1/16	1 1/4	—	—	—	—
	B	2 1/4	2 1/2	2 5/8	—	—	—	—
	C	2 3/4	3 3/16	3 11/16	—	—	—	—
No. 51	A	1	1 1/4	1 3/8	1 5/8	—	—	—
	B	2 7/16	2 11/16	2 15/16	3 1/2	—	—	—
	C	2 15/16	3 3/8	3 3/4	4 7/16	—	—	—
No. 51 H.P.	A	7/8	1 1/16	1 1/4	1 3/4	—	—	—
	B	2 1/4	2 1/2	2 7/8	3 9/16	—	—	—
	C	2 3/4	3 3/16	3 11/16	4 3/4	—	—	—
No. 52	D	2	2 1/8	2 9/16	2 9/16	3	3 1/8	4 5/8
No. 52 H.P.	D	1 11/16	2	2 5/16	2 1/2	2 15/16	3 3/8	—
No. 53	D	3 1/2	3 5/8	3 7/8	4 3/16	5 1/8	6	—
No. 54	D	2	2 1/8	2 9/16	2 5/8	3	3 1/8	—
No. 54 H.P.	D	1 11/16	2	2 5/16	2 1/2	2 15/16	3 3/8	—
No. 55	D	3 7/16	3 5/8	3 7/8	4 3/16	5 1/8	6	—
No. 55 H.P.	D	3 5/8	3 1/2	3 7/8	4 1/2	—	—	—
No. 56	D	3 3/8	3 3/4	4	4 3/16	—	—	—
No. 56 H.P.	D	3 1/4	3 1/2	4	4 11/16	—	—	—
No. 57	A	1	1 3/16	1 1/2	1 3/4	—	—	—
	B	2 1/4	2 5/8	2 15/16	3 5/8	—	—	—
	C	2 13/16	3 5/16	3 3/4	4 1/2	—	—	—
No. 57 H.P.	A	1	1 1/16	1 3/8	—	—	—	—
	B	2 3/8	2 5/8	3 1/16	—	—	—	—
	C	2 8/8	3 5/16	3 10/16	—	—	—	—
No. 59	D	2 1/4	2 1/2	2 3/4	3	—	—	—
No. 59 H.P.	D	2 3/8	2 11/16	3 1/4	—	—	—	—
No. 120	D	2 1/2	3 1/8	3 5/8	4 1/8	4 3/8	5 1/2	—
No. 140	D	2 1/2	3	3 3/8	3 15/16	4 3/8	5 1/4	—

IDEAL CONCEALED VALVES

Nos. 4, 10 & 12

These Valves have a non-rising spindle, giving minimum possible projection.

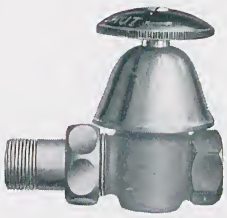
They give the advantage of a top feed to radiators having supply and return connections at bottom; this being secured by assembling the first and second sections at bottom with a solid malleable iron nipple, so that the water, upon entering, rises up the first section before passing through the radiator under control of the valve.

No. 4—1¼ in. for Neo-Hospital (5¾ and 7¼ in.).

No. 10—1¼ in. for Nos. 4 and 6 Neo-Classic Radiators (30 and 36 in.).

No. 12—1 in. for No. 2 (all heights) and Nos. 4 and 6 Neo-Classic (18 and 24 in.) and 3 in. Neo-Hospital.

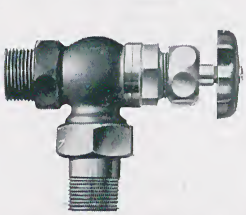
Order valve with radiator to ensure the special nipples being used. A brass top nipple supplied at extra charge.



Nos. 13A & 13B

FOR IDEAL RAYRAD Nos. 35, 36 & 36A

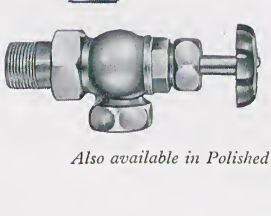
No. 13A. ½ or ¾ in., Double Regulating, for water or steam. The double regulating is achieved by means of an adjusting screw in the spindle.



No. 15

FOR IDEAL RAYRAD No. 44

No. 13B. ½, ¾ or 1 in., Double Regulating, for water or steam. The double regulating is achieved by means of an adjusting screw in the spindle.



No. 16

FOR IDEAL RAYRAD No. 45

Nos. 15 and 16. ½, ¾ or 1 in., for water or steam.

Available with Lock Shield, with additional charge for key.

Also available in Polished and Polished-and-chromium-plated finish.

IRON BODY GATE VALVES

With Gun-metal Working Parts

No. 100 **No. 101**

	Available in the following sizes	Face to Face		Flange Diameter No. 101
		No. 100	No. 101	
No. 100 (Screwed) No. 101 (Flanged)	2 inch	$5\frac{1}{2}$ inch	$5\frac{1}{2}$ inch	6 inch
	$2\frac{1}{2}$,,	$5\frac{3}{4}$,,	$5\frac{1}{2}$,,	$6\frac{1}{2}$,,
	3 ,,	$6\frac{1}{2}$,,	6 ,,	$7\frac{1}{4}$,,
	4 ,,	$7\frac{1}{4}$,,	$6\frac{3}{8}$,,	$8\frac{1}{2}$,,
	5 ,,	$8\frac{1}{2}$,,	$7\frac{1}{2}$,,	10 ,,
	6 ,,	$9\frac{1}{4}$,,	$8\frac{1}{2}$,,	11 ,,

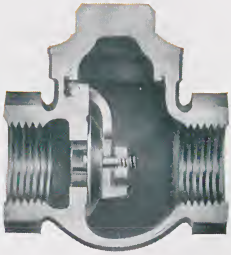
All No. 101 valves are regularly supplied with flanges faced and drilled British Standard, Table D.

GLOBE VALVES

No. 120

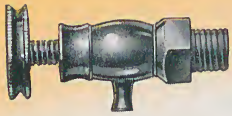
SWING CHECK VALVES

No. 140

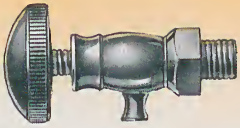


No. 120 Renewable Disc Valve, and No. 140 Check Valve available in $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2 inch sizes.

RADIATOR AIR VALVES

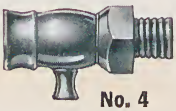


No. 2



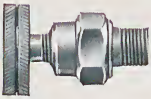
No. 3

Key

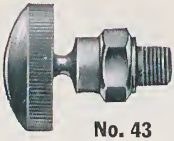


No. 4

No. 41

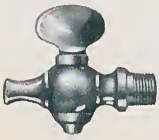


No. 42



No. 43

All above available in $\frac{1}{8}$ and $\frac{1}{4}$ inch sizes, Brass or Chromium-plated



No. 401

No. 403

No. 404

Nos. 401, 403 and **404**—Available in $\frac{1}{8}$ and $\frac{1}{4}$ inch sizes; Polished Brass only
Levers supplied for No. 404.

No. 22

No. 22—$\frac{1}{4}$ inch Flush Air Valve for Ideal Rayrad Nos. 35, 36, 36A, 44 and 45.

Keys *for* **Nos. 4, 22** *and* **41** *available in Brass or Chromium-plated.*

IDEAL BRASS AIRLET PLUG

For Hot Water Radiators

The Ideal Airlet Plug offers an effective and neat method of venting radiators, eliminating the projecting aircock.

Available in 1, 1¼, 1½ and 2 inch sizes. Keys extra.

IDEAL CAST-IRON VENT PLUG

Supplied free of charge with the following radiators: Ideal Neo-Classic, Ideal Neo-Classic Window, Ideal Neo-Hospital and Ideal Classic Wall.

Available in 1 inch and 1¼ inch sizes. Keys extra.

AUTOMATIC AIR VALVE

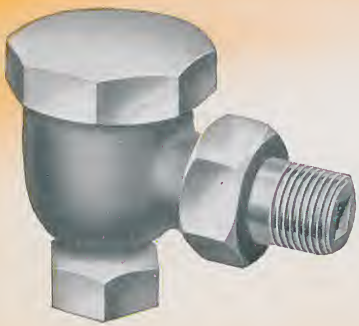
No. 6 For Steam Radiators

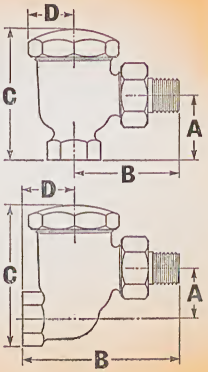
Air Valve and Drip Cup supplied in chromium-plated finish.

Instructions for use:—

Before fixing the valve, loosen screw "A", and when the radiator becomes hot, tighten the screw gradually until there is no escape of steam at outlet "B". Then screw on the cap tightly to prevent interference with the adjustment.

BALANCED PRESSURE STEAM TRAPS

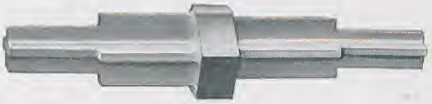




This trap has a brass body and cap, and incorporates a ground ball valve and seat of stainless steel, thus ensuring a perfect cut-off and no steam leak. Due to its thermostatic action the trap is fully open when cold and always discharges air which reaches the trap. It has a high draining capacity. The trap has a ball socket union joint to take up any alignment of piping. It has a readily detachable element, so that new systems can be blown through with the trap element removed. This trap is suitable for pressures up to 40 lb. per square inch.

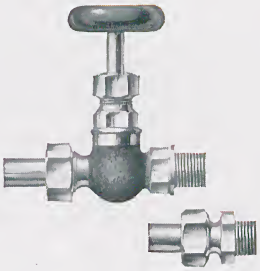
Size	Pattern	Capacities lb./hr.		Dimensions in inches			
		At 1 lb. Pressure	At 20 lb Pressure	A	B	C	D
$\frac{1}{2}$ in.	Angle	130	460	$1\frac{1}{2}$	$2\frac{1}{2}$	3	1
$\frac{1}{2}$ in.	Straight	130	460	$1\frac{5}{16}$	$3\frac{7}{8}$	$3\frac{1}{2}$	$1\frac{3}{8}$
$\frac{3}{4}$ in.	Angle	205	680	$1\frac{1}{2}$	$2\frac{3}{4}$	3	1
$\frac{3}{4}$ in.	Straight	205	680	$1\frac{3}{8}$	$4\frac{3}{16}$	$3\frac{5}{8}$	$1\frac{3}{8}$

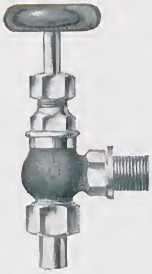
IDEAL UNION WRENCH



This Wrench enables the connection of Union Radiator Valves or Elbows to be made quickly and tightly without fear of damage to the Unions. The Wrenches are made of malleable iron, japanned black, and can be used for $\frac{1}{2}$, $\frac{3}{4}$, 1 and $1\frac{1}{4}$ inch sizes.

SHIPS' HEATER VALVES





Male end screwed gas thread. Female union normally supplied screwed for copper pipe, $\frac{3}{8}$ or $\frac{1}{2}$ inch outside diameter, 26 threads to the inch. Special female unions supplied on request.

Valve, Straight or Angle pattern, and straight union supplied in $\frac{3}{8}$ and $\frac{1}{2}$ inch sizes.

Specify whether inlet or outlet Valves required.

THROTTLE VALVES

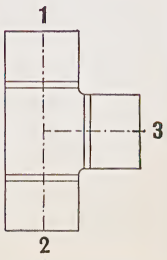
Complete with Index Plate. Available in $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2 inch sizes.

No. 100 Tee

No. 100R Tee (*Reducing*)

No. 100 (*Equal Sizes*)	$\frac{1}{4}''$	$\frac{3}{8}''$	$\frac{1}{2}''$	$\frac{3}{4}''$	1″	$1\frac{1}{4}''$	$1\frac{1}{2}''$	2″
Prices	2/3	2/5	2/7	3/4	4/11	8/1	11/3	16/2

Method of reading sizes



No. 100R. Dimensions in inches
(*Prices as largest copper size*)

$\frac{3}{8} \times \frac{3}{8} \times \frac{1}{4}$	1 × $\frac{3}{4}$ × $\frac{3}{4}$	$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{1}{2}$*
$\frac{1}{2} \times \frac{1}{2}$* × $\frac{1}{2}$	1 × $\frac{3}{4}$ × 1	$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{3}{4}$
$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{4}$	1 × $\frac{1}{2}$* × 1	$1\frac{1}{4} \times 1\frac{1}{4} \times 1$
$\frac{1}{2} \times \frac{1}{2} \times \frac{3}{8}$	1 × 1 × $\frac{3}{8}$	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{4}$
$\frac{3}{4} \times \frac{1}{2} \times \frac{1}{2}$	1 × 1 × $\frac{1}{2}$	$1\frac{1}{2} \times 1\frac{1}{2} \times 1$
$\frac{3}{4} \times \frac{1}{2} \times \frac{3}{4}$	1 × 1 × $\frac{1}{2}$*	$1\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{4}$
$\frac{3}{4} \times \frac{1}{2}$* × $\frac{3}{4}$	1 × 1 × $\frac{3}{4}$	2 × 2 × 1
$\frac{3}{4} \times \frac{3}{4} \times \frac{3}{8}$	$1\frac{1}{4} \times \frac{3}{4} \times \frac{3}{4}$	2 × 2 × $1\frac{1}{4}$
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{2}$	$1\frac{1}{4} \times \frac{3}{4} \times 1\frac{1}{4}$	2 × 2 × $1\frac{1}{2}$
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{2}$*	$1\frac{1}{4} \times 1 \times 1$	
1 × $\frac{3}{4} \times \frac{1}{2}$	$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{1}{2}$	

* **Female iron.**

No. 300
Elbow

No. 300R
Elbow
(*Reducing*)

No. 300 (*Equal Sizes*)	$\frac{1}{4}''$	$\frac{3}{8}''$	$\frac{1}{2}''$	$\frac{3}{4}''$	1″	$1\frac{1}{4}''$	$1\frac{1}{2}''$	2″
Prices	1/3	1/5	1/9	2/3	3/9	5/5	7/8	11/8

No. 300R (*Reducing*) $\frac{1}{2}'' \times \frac{3}{8}''$, 1/9; $\frac{3}{4}'' \times \frac{1}{2}''$, 2/3; 1″ × $\frac{3}{4}''$, 3/9.

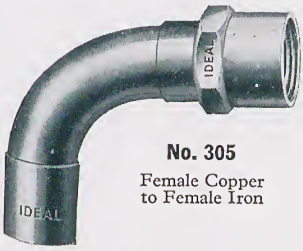
IDEAL FULL-WAY FITTINGS

For use with light gauge Copper tubes to B.S.S. 659 and B.S.S. 1386

No. 301
M. & F. Elbow

No. 303
45° Elbow

No. 304
45° M. & F. Elbow



No. 305
Female Copper to Female Iron

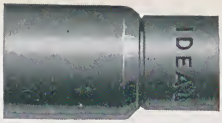
No. 306
Female Copper to Male Iron

No. 400
Female Double Socket

No. 401
Female Sliding Socket

Size, in.	¼	⅜	½	¾	1	1¼	1½	2
No. 301	1/3							
No. 303	—	1/5	1/9	2/3	3/9	5/5	7/8	11/8
No. 304	—							
No. 305	—	—	3/8	4/9	7/6	15/3	19/3	29/6
No. 306	—	—	3/7	4/6	7/5	10/9	18/-	25/6
No. 400	-/7½	-/8½	-/10	1/1	1/6	2/5	3/6	4/11
No. 401	-/9	-/10	-/11	1/3	1/11	3/2	4/6	6/3

No. 402
Female Reducing Socket



No. 403
Male and Female Reducing Socket

Female End, in.		¼″	⅜″	½″	¾″	1″	1¼″	1½″	Prices No. 402	Prices No. 403
Female End No. 402	⅜	* ×							1/1	—
	½	* ×	×						1/3	1/3
	¾		×	×					1/9	1/9
	1		×	×	×				2/7	2/7
Male End No. 403	1¼				×	×			3/8	3/8
	1½				×	×	×		4/11	4/11
	2	* 402 only.				×	×	×	6/9	6/9

No. 410
Copper to Lead Connector

No. 450
Cap

No. 470
Copper to Copper Female Union

No. 471
Female Copper to Female Iron Union

No. 472
Female Copper to Male Iron Union

Size, in.	¼	⅜	½	¾	1	1¼	1½	2
No. 410	—	—	1/10	2/7	3/5	5/10	—	—
No. 450	-/6½	-/7½	-/8	1/-	1/3	1/7	2/3	2/7
No. 470	3/9	3/9	3/9	4/11	8/2	10/6	19/-	30/-
No. 471	3/9	3/9	4/5	5/9	7/6	12/3	23/9	34/-
No. 472	3/9	3/9	3/10	4/11	6/7	12/-	20/3	31/-

IDEAL FULL-WAY FITTINGS

For use with light gauge Copper tubes to B.S.S. 659 and B.S.S. 1386

No. 500
Female Copper to Female Iron

No. 501
Female Copper to Male Iron

No. 502
Male Copper to Female Iron

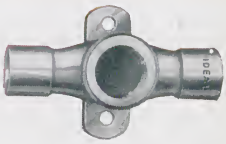
No. 503
Male Copper to Male Iron

No. 504
Connector

No. 505
Double Nut Connector

Size, in.	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 500	1/8	1/11	1/11	2/6	3/8	9/8	11/6	17/9
No. 501	1/6	1/10	1/10	2/3	3/8	5/3	10/4	13/10
No. 502	1/8	2/3	2/3	2/8	4/4	10/4	12/3	19/6
No. 503	1/8	1/10	1/10	2/3	3/8	8/4	11/-	19/3
No. 504	—	—	3/7	4/6	9/3	12/8	16/8	—
No. 505	—	3/1	3/2	4/3	7/2	16/9	22/3	25/3

Bent Connector with Wall Plate
Female Copper to Female Iron

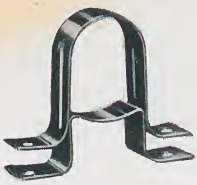


Tee with Wall Plate
Female Copper to Female Iron

No. 550		No. 551		No. 555	
$\frac{1}{2}'' \times \frac{1}{2}''$ F.I.	3/7			$\frac{1}{2}'' \times \frac{1}{2}'' \times \frac{1}{2}''$ F.I.	4/6
$\frac{1}{2}'' \times \frac{3}{4}''$ F.I.	7/4	$\frac{1}{2}'' \times \frac{1}{2}''$ F.I.	3/9	$\frac{3}{4}'' \times \frac{3}{4}'' \times \frac{1}{2}''$ F.I.	9/3
$\frac{3}{4}'' \times \frac{3}{4}''$ F.I.	7/4	$\frac{3}{4}'' \times \frac{3}{4}''$ F.I.	7/8	$\frac{3}{4}'' \times \frac{3}{4}'' \times \frac{3}{4}''$ F.I.	9/9
$1'' \times 1''$ F.I.	11/-				

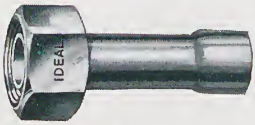
No. 590

No. 591



No. 602

No. 601



No. 610

Pillar Tap Connector
($\frac{1}{2}$ in. and $\frac{3}{4}$ in. are Female Copper)
(1 in. and $1\frac{1}{4}$ in. are Male Copper)

No. 612

Straight Cylinder Connector (Ground Seat) Female Copper

No. 614

Straight Union Cylinder Connector

Size in Inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 590 Cast Brass per doz.	—	—	18/6	20/6	24/3	27/6	38/6	53/
No. 590 Stamped Brass ,,	—	—	25/6	30/-	35/-	38/-	48/6	61/
No. 591 Cast Brass ,,	—	—	19/-	21/-	24/9	28/-	39/-	54/
No. 591 Stamped Brass ,,	—	—	17/3	21/-	24/9	28/6	34/-	43/
No. 601 Pipe Strap ,,	1/3	1/5	1/8	2/1	2/9	4/2	6/-	7/
No. 602 Spacing Clip ,,	—	3/10	3/10	4/10	6/4	8/8	13/3	17/
No. *610WS (Washered Seat)	—	—	3/-	4/4	8/7	10/6	—	—
No. 610GS (Ground Seat)	—	—	3/-	4/4	—	—	—	—

* *Also available $\frac{1}{2}$ in. female copper with union nut tapped $\frac{3}{4}$ in. iron.* PRICE 3/9 each.

No. 612 $\frac{1}{2}$-in. union nut tapped $\frac{3}{4}$ in. ..	PRICE 2/5 each.
No. 612 $\frac{3}{4}$-in. ,, ,, ,, 1 in. ..	.. ,, 2/8 ,,
No. 612 1-in. ,, ,, ,, $1\frac{1}{4}$ in. ..	.. ,, 3/7 ,,
No. 614 $\frac{3}{4}$-in. copper by $\frac{3}{4}$ in. male iron	.. ,, 4/11 ,,
No. 614 1-in. ,, ,, 1 in. ,, ,,	.. ,, 6/7 ,,

IDEAL FULL-WAY FITTINGS

For use with light gauge Copper tubes to B.S.S. 659 and B.S.S. 1386

No. 620

Globe Tap Connector
Female Copper
to Male Iron

No. 630

Ball Tap Connector
Female Copper

No. 632

Bent Cylinder
Connector (Ground Seat)
Female Copper

No. 634

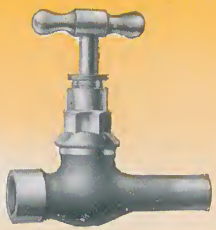
Bent Union
Cylinder Connector
Female Copper
to Male Iron

Size in Inches	½	¾
*No. 620	3/2	4/4
No. 630WS (Washered Seat)	3/6	4/6
No. 630GS (Ground Seat)	3/6	4/6

* *Also available ½ in. female copper by ¾ in. iron.* PRICE 4/- each.

No. 632 ½-in. union nut tapped ¾-in.	PRICE 4/2 each.
No. 632 ¾-in. ,, ,, ,, 1-in.	,, 5/2 ,,
No. 632 1-in. ,, ,, ,, 1¼-in.	,, 7/5 ,,
No. 634 ¾-in. copper by ¾-in. male iron	,, 7/5 ,,
No. 634 1-in. ,, ,, 1-in. ,, ,,	,, 10 5 ,,
No. 634 1¼-in. ,, ,, 1¼-in. ,, ,,	,, 16/5 ,,

No. 720 Stop Cock
Double Female Copper

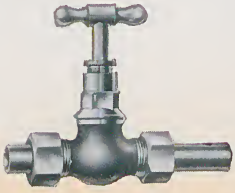


No. 721 Stop Cock
Female Copper to Lead

No. 722
Female Copper
to Male Iron

No. 730
Gate Valve
Double Female
Copper

No. 735
Union Stop Cock
Copper to Copper



No. 736
Union Stop Cock
Copper to Lead

No. 737
Union Stop Cock
Copper to Male Iron

Size, in.	½	¾	1	Size, in.	½	¾	1
No. 720	12/10	18/6	33/6	‡No. 730	13/-	15/-	20/3
No. 721	12/10	18/6	*22/11	No. 735	16/6	23/9	45/-
				No. 736	17/3	25/-	49/6
No. 722	12/10	18/6	33/6	No. 737	15/9	22/-	—

All stopcocks to B.S.S. 1010.

* No. 721. 1 inch size is supplied M.O.H. only.

‡ No. 730. also supplied in sizes 1¼ inch **34/3,** 1½ inch **45/6,** 2 inch **64/6.**

All above can be supplied fitted with Lock Shield.

IDEAL SOLDER

Specially made up in handy reels of 11G Solder Wire, is most economical in use, and is recommended for all general Plumbing and Heating Installations. PRICE: 1 lb. Reels, **7/6** each; 2 lb. Reels, **15/-** each. (1 lb. = approx. 24 ft.)

Approximate amount of Solder needed for each joint is equal to the nominal diameter of the pipe. Examples: 1 in. Fitting, use 1 in. of Solder; 2 in. Fitting, use 2 in. of Solder.

IDEAL SOLDERING FLUX

To ensure satisfactory joints, use only 'Ideal Soldering Flux', which is supplied in 8 oz. and 1 lb. tins. 8 oz. tins, **2s. 6d.** each; 1 lb. tins, **3s. 8d.** each.

STEEL WOOL

For cleaning copper tube. Supplied in convenient 1 lb. cartons, **3s. 6d.** each.

IDEAL PASTE SOLDER

The use of Ideal Paste Solder means a considerable saving of time and labour. Previous cleaning of the tube is not necessary, unless the amount of oxidization is exceptionally heavy.

To maintain the correct consistency of Ideal Paste Solder, the tin should be kept closed when not in use. If the paste thickens, a little water should be added to regain the original consistency.

Ideal Paste Solder is supplied in 1 lb. and 3 lb. tins. PRICE, **10s. 0d.** per lb.

COPPER TUBE

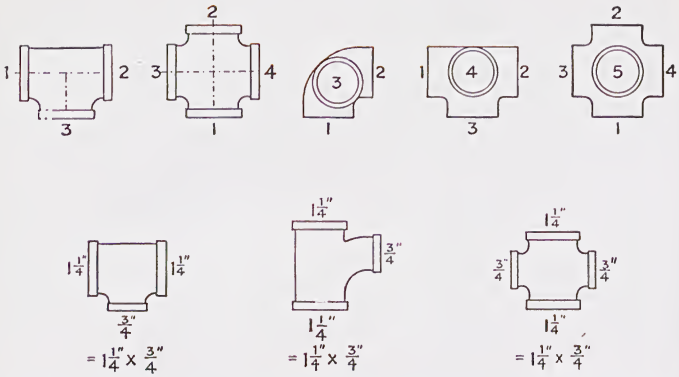
The copper tube used with Ideal Full-way Fittings should be of best quality, and to British Standard No. 659/1944 for light gauge copper tube as in table below, or British Standard No. 1386/1947. Quotations will be sent on request.

BRITISH STANDARD No. 659/1944

Nominal Size in.	Outside Diameter in.	Wall Thickness in.	Wall Thickness S.W.G.	Approximate Weight Pounds per Lineal ft.
$\frac{1}{4}$	·346	·036	20	·135
$\frac{3}{8}$	·471	·036	20	·19
$\frac{1}{2}$	·596	·040	19	·27
$\frac{3}{4}$	·846	·040	19	·39
1	1·112	·048	18	·62
$1\frac{1}{4}$	1·362	·048	18	·76
$1\frac{1}{2}$	1·612	·048	18	·91
2	2·128	·056	17	1·40

The above table relates to tubes for water and gas only.

METHOD OF READING SIZES



Size in inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4	5
P20	-/8½	-/8½	-/9½	1/2½	1/8½	2/7¼	3/6	5 -	9/-	14/-	24/-	63/-
P21	-/9½	-/9½	1/-	1/4¾	2/-	2/9½	4/-	5/6	10/-	16/-	27/6	72/-
P22	1/2½	1/2½	1/4¾	2/-	2/9½	3/7¼	5/2½	7/2½	12/-	19/2½	33/-	86/-
P23	—	-/8½	-/9½	1/2½	1/8½	2/7¼	3/6	5/-	9/-	14/-	24/-	63/-
*P24	—	—	1/6	2/1¼	3/-	4/2½	6/-	8/6	14/-	21/-	35/-	—
P25	-/9½	-/9½	-/10¾	1/3½	1/10¾	2/9½	3/9½	5/6	10/-	16/-	27/6	72/-
P25A	—	-/9½	-/10¾	1/3½	1/10¾	2/9½	3/9½	5/6	10/-	16/-	27/6	—
P27	-/5½	-/5½	-/6¾	-/9	1/-	1/6	2/-	3/-	4/9½	7/8½	13/-	24/-
P28	—	—	-/9½	1/-	1/4¾	1/9½	2/4¾	3/2½	5/2½	8/6	16/-	27/-
P30	-/5¾	-/5¾	-/7	-/9	1/-	1/7	2/2½	3/1	5/3	8/5	14/5	25/3
P31	-/3½	-/3½	-/4¾	-/7¼	-/9½	1/2½	1/9½	2/3½	4/-	6/-	11/-	27/-
P32	-/8	-/8	-/9½	1/-	1/4¾	2/1¼	2/10¾	4/2½	—	—	—	—
†P33	—	—	1/6	1/9½	2/6	3/6	5/6	7/6	12/-	19/-	—	—
P35	—	1/2½	1/4¾	2/2½	2/10¾	4/4¾	6/-	8/-	—	—	—	—
P36	—	—	1/9½	2/7¼	3/7¼	5/-	7/-	9/6	—	—	—	—

* All sizes can be supplied with branch at 45°, 60° and 75°.

† Tongue Tees reducing on the run charged 2½% less gross discount. 6 inch size available, P20, P21, P23 and P27.

Individually tested to 100 lb. air under water or 300 lb. hydrostatic.

IDEAL "P" FITTINGS

Beaded Malleable Iron — Black and Galvanised

P20

P21

P22

P23

P24

P25

P25A

P27

P28

P30

P31

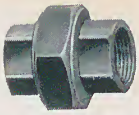
P32

P33

P35

P36

P73 & P75



P91 & P94

P92 & P95

P80

P80A

P81

P82

P83

Size in Inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5
*P73	2/10$\frac{3}{4}$	2/10$\frac{3}{4}$	3/7$\frac{1}{4}$	4/8$\frac{1}{2}$	6/-	8/2$\frac{1}{2}$	11/2$\frac{1}{2}$	15/7$\frac{1}{4}$	—	—	—	—
†P75	6/8	6/8	8/4	11/3	13/6$\frac{1}{2}$	18/11$\frac{1}{2}$	24/2	33/9	—	—	—	—
P80A	1/1	1/1	1/3$\frac{1}{2}$	1/9$\frac{1}{2}$	2/9$\frac{1}{2}$	4/2$\frac{1}{2}$	6/-	9/-	16/9	25/3	50/5	104/
P80	1/2$\frac{1}{2}$	1/2$\frac{1}{2}$	1/5	2/-	3/-	4/8$\frac{1}{2}$	6/7	10/-	18/6	27/7	55/3	110/
P81	—	—	1/9$\frac{1}{2}$	2/10$\frac{3}{4}$	4/3$\frac{1}{2}$	6/-	8/6	12/-	23/-	38/-	60/-	250/
P82	—	—	1/6	2/4$\frac{3}{4}$	3/7$\frac{1}{4}$	5/-	7/-	10/-	19/-	32/-	55/-	170/
P83	—	—	2/9$\frac{1}{2}$	4/-	5/7$\frac{1}{4}$	7/2$\frac{1}{2}$	10/6	14/6	24/-	38/-	65/-	—
*P91	2/4$\frac{3}{4}$	2/4$\frac{3}{4}$	2/10$\frac{3}{4}$	3/7$\frac{1}{4}$	4/4$\frac{3}{4}$	5/9$\frac{1}{2}$	7/9$\frac{1}{2}$	11/-	19/6	31/6	60/-	—
*P92	2/9$\frac{1}{2}$	2/9$\frac{1}{2}$	3/4$\frac{3}{4}$	4/2$\frac{1}{2}$	5/2$\frac{1}{2}$	6/9$\frac{1}{2}$	9/2$\frac{1}{2}$	13/-	23/-	37/-	—	—
†P94	4/7	4/7	4/9$\frac{1}{2}$	5/5	7/1	9/9$\frac{1}{2}$	11/10$\frac{1}{2}$	15/-	30/7$\frac{1}{2}$	50/-	98/-	—
†P95	5/2$\frac{1}{2}$	5/2$\frac{1}{2}$	6/0$\frac{1}{2}$	8/1$\frac{1}{2}$	10/2$\frac{1}{2}$	14/2	16/10$\frac{1}{2}$	22/6	40/5	63/6	—	—

* Ground seat.

† Brass to iron seats; list prices in Galvanised Finish on application. 6 inch size available Nos. P80, P81 and P82.

Individually tested to 100 lb. air under water or 300 lb. by hydrostatic.

IDEAL "P" FITTINGS

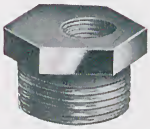
Beaded Malleable Iron — Black and Galvanised

P84

P85

P61

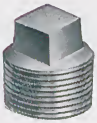
P110



P112

P113

P6



P114

P115

Size in Inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5
P6	-/3	-/3	-/$3\frac{1}{4}$	-/$4\frac{1}{4}$	-/$5\frac{3}{4}$	-/$7\frac{3}{4}$	-/$10\frac{1}{4}$	1/$5\frac{1}{4}$	2/$1\frac{1}{4}$	3/$4\frac{3}{4}$	6/-	12/-
P61	—	—	1/$8\frac{1}{4}$	2/$6\frac{1}{2}$	3/$7\frac{1}{4}$	5/$3\frac{1}{2}$	7/$2\frac{1}{2}$	10/$9\frac{3}{4}$	18/$4\frac{1}{4}$	28/$9\frac{1}{2}$	72/-	—
Centres, in inches	—	—	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	*4	$4\frac{1}{2}$	6	$7\frac{3}{8}$	
P84	—	—	1/1	1/5	2/$2\frac{1}{2}$	3/5	4/$9\frac{1}{2}$	7/$2\frac{1}{2}$	13/5	20/3	40/3	—
P85	—	—	1/$2\frac{1}{2}$	1/$8\frac{1}{2}$	2/5	3/$9\frac{1}{2}$	5/5	8/5	15/7	22/-	44/5	—
P110	-/$4\frac{3}{4}$	-/$4\frac{3}{4}$	-/6	-/8	-/$10\frac{3}{4}$	1/$4\frac{3}{4}$	1/$9\frac{1}{2}$	2/$8\frac{1}{2}$	4/6	7/-	12/-	22/-
P112	—	—	1/-	1/$2\frac{1}{2}$	1/$8\frac{1}{2}$	2/$1\frac{1}{4}$	3/-	4/-	6/$2\frac{1}{2}$	10/-	18/6	—
P113	—	-/6	-/$7\frac{1}{4}$	-/$9\frac{1}{2}$	1/-	1/6	2/-	3/-	5/-	—	—	—
†P114	-/3	-/3	-/$3\frac{3}{4}$	-/6	-/8	1/-	1/$4\frac{3}{4}$	1/$10\frac{3}{4}$	3/$3\frac{1}{2}$	5/-	9/-	21/$7\frac{1}{4}$
P115	-/6	-/6	-/$7\frac{1}{4}$	-/$9\frac{1}{2}$	1/-	1/$7\frac{1}{4}$	2/$2\frac{1}{2}$	3/$2\frac{1}{2}$	5/$4\frac{3}{4}$	8/$7\frac{1}{4}$	15/-	30/-

* Can also be supplied at 6 in. centres, PRICE **16/$9\frac{3}{4}$** each.
† Solid Plugs charged at 50% on list.
6 inch size available Nos. P110, P114 and P115.

PIPE BRACKETS AND HANGERS

No. 190

No. 191

No. 200

No. 230

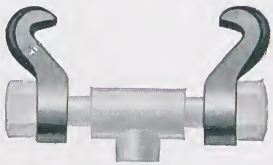
No. 330

All above supplied in:—$\frac{1}{4}$ inch to 4 inch sizes.
Nos. 190 and 191 also available for $\frac{1}{2}$, $\frac{3}{4}$, and 1 inch B.S.S. Copper Tube.
Nos. 230 and 330 Pipe Rings for $\frac{1}{4}$ to $1\frac{1}{4}$ inch pipe are tapped $\frac{1}{4}$ inch.
" " " " $1\frac{1}{2}$ to 2 inch " " " $\frac{3}{8}$ inch.
" " " " $2\frac{1}{2}$ to 4 inch " " " $\frac{1}{2}$ inch.

CIRCULAR PLATE

RECTANGULAR PLATE

Circular and Rectangular Plates are supplied in $\frac{1}{4}$, $\frac{3}{8}$, and $\frac{1}{2}$ inch sizes for use with Nos. 230 and 330 rings.



GIRDER LUG

Girder Lugs are supplied in pairs for use with $\frac{1}{2}$ inch Bolts and Tee pieces.
All above supplied in Black Japanned or Galvanised finish except No. 200—Black finish only.

FLOOR AND CEILING PLATES

Clip-on Pattern

Set-screw Pattern

Clip-on Pattern. Supplied in all sizes $\frac{3}{8}$ inch to 3 inch for Iron Pipes and $\frac{1}{2}$ inch to $1\frac{1}{4}$ inch for Copper Tubes to B.S.S. 659.
One finish only—Polished Aluminium.

Set-screw Pattern. Supplied in all sizes $\frac{3}{8}$ inch to 4 inch for Iron Pipes. $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2 inch sizes are Zinc Alloy Die Castings. All other sizes—Cast Iron.

Also available in Polished and Chromium-plated finish.

PIPE SADDLES

No. 240

2 to 3 in.

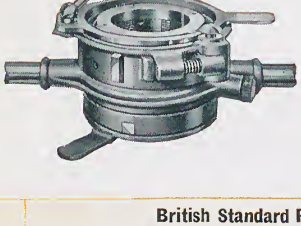
No. 241

4 to 6 in.

Number	SIZE OF PIPE IN INCHES						
	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5	6
No. 240 Tapped for Pipe	$\frac{1}{2}$-1	$\frac{1}{2}$-$1\frac{1}{2}$	$\frac{3}{4}$-$1\frac{1}{2}$	$\frac{3}{4}$-2	$\frac{3}{4}$-2	$\frac{3}{4}$-3	$\frac{3}{4}$-4
No. 241 Tapped for Pipe	—	$\frac{1}{2}$-$1\frac{1}{2}$	$\frac{1}{2}$-$1\frac{1}{4}$	$\frac{1}{2}$-2	$\frac{1}{2}$-3	—	—

"PRESTO" RATCHET PATTERN CHASER DIE STOCKS

BRITISH MADE



The Die Plate is graduated for setting Dies to cut standard sizes, but under or over size can be cut.

Right or Left-hand Ratchet. Dies easily removed.

No winding back after screwing a thread. Simply press the button and the Dies open. Instantaneously closed ready for screwing again.

Set No.	British Standard Pipe Thread				Prices			Price Extra Set of Dies		
	1 Set of Dies inches	1 Set of Dies inches	1 Set of Dies inches	1 Set of Dies inches	£	s.	d.	£	s.	d.
1R	$\frac{1}{4}$-$\frac{3}{8}$	$\frac{1}{2}$-$\frac{3}{4}$	1-1$\frac{1}{4}$	—	8	2	0	1	0	6
2R	1-1$\frac{1}{4}$	1$\frac{1}{2}$-2	—	—	10	5	0	1	4	0
3R	$\frac{1}{2}$-$\frac{3}{4}$	1-1$\frac{1}{4}$	1$\frac{1}{2}$-2	—	11	9	0	1	4	0
3$\frac{1}{2}$R	$\frac{1}{4}$-$\frac{3}{8}$	$\frac{1}{2}$-$\frac{3}{4}$	1-1$\frac{1}{4}$	1$\frac{1}{2}$-2	12	13	0	1	4	0
5R	1-1$\frac{1}{4}$	1$\frac{1}{2}$-2	2$\frac{1}{2}$-3	—	20	2	0	1	17	0
6R	2$\frac{1}{2}$-3	3$\frac{1}{2}$-4	—	—	22	10	0	2	3	6
7R	1$\frac{1}{2}$-2	2$\frac{1}{2}$-3	3$\frac{1}{2}$-4	—	24	13	6	2	3	6

"PRESTO" PLAIN PATTERN CHASER DIE STOCKS

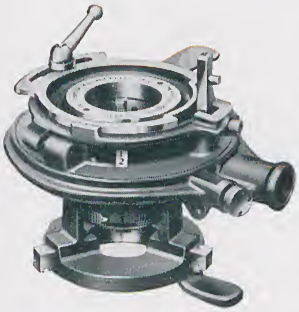
A full thread can be cut in one operation, but two or more cuts can be taken if desired.

The Die Plate is graduated for setting Dies to cut standard sizes, but under or over size can be cut.

The Dies are guaranteed interchangeable, and a single Die can be supplied which will work correctly with the other three.

Set No.	British Standard Pipe Thread			Prices			Price Extra Set of Dies		
	1 Set of Dies inches	1 Set of Dies inches	1 Set of Dies inches	£	s.	d.	£	s.	d.
0	$\frac{1}{4}$-$\frac{3}{8}$	$\frac{1}{2}$-$\frac{3}{4}$	—	5	0	0		17	0
1	$\frac{1}{4}$-$\frac{3}{8}$	$\frac{1}{2}$-$\frac{3}{4}$	1-1$\frac{1}{4}$	7	5	0	1	0	6
2	1-1$\frac{1}{4}$	1$\frac{1}{2}$-2	—	9	3	0	1	4	0
3	$\frac{1}{2}$-$\frac{3}{4}$	1-1$\frac{1}{4}$	1$\frac{1}{2}$-2	10	7	0	1	4	0

No. 460 "PRESTO" CHASER DIE STOCKS
RATCHET RECEDER PATTERN



Specially made for easy screwing.

The following are the advantages of this new stock.

Changed from Parallel to Taper or vice versa by rotating a small screw with knurled head.

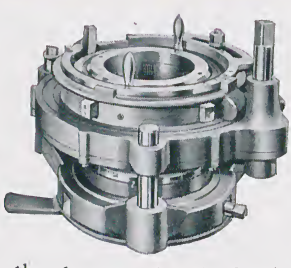
When the thread is cut the Dies can be instantly opened and the Stock taken off the pipe.

One set of Dies covers the range of the Stock and there are therefore no loose Dies.

Narrow Dies with rounded throat.

Self-centering Chuck which is locked to pipe.

To Screw Pipe inches	Weight lb.	Price Complete £ s. d.	Price, Set of Dies £ s. d.
1, 1¼, 1½, 2	29	15 0 0	1 12 0



No. 480 "PRESTO" GEARED RECEDER STOCK

This Stock is designed so that the Driving Pinion remains stationary whilst the Die Holder revolves in the body of the casing.

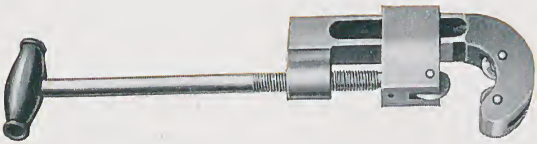
The handle operating the Driving Pinion is so designed that when not working in a confined space it can be turned into a fully cranked handle, thereby operating the Stock similar to a small screwing machine, and in consequence producing a screwed thread much quicker than when using a plain ratchet handle.

The other features are, quick change from Taper Threads to Parallel Threads and vice versa. Quick release of the Dies on completion of screwing without affecting the setting.

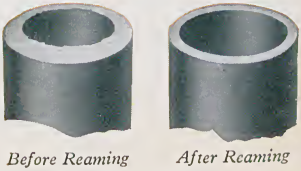
PRICE, 2¼"–4" **£37 0s. 0d.** Extra Set of Dies **£2 15s. 0d.**

STILLSON PATTERN PIPE WRENCH

CHAIN PIPE WRENCH



BARNES' PATTERN PIPE CUTTERS



Before Reaming *After Reaming*

IDEAL BURRING REAMER

STILLSON PATTERN PIPE WRENCH

With Steel Handle

Length open inches	Pipe Sizes inches	Price Complete £ s. d.
8	$\frac{1}{8}$-$\frac{3}{4}$	10 6
10	$\frac{1}{8}$-1	13 9
14	$\frac{1}{4}$-1$\frac{1}{2}$	19 0
18	$\frac{1}{4}$-2	1 5 6
24	$\frac{1}{4}$-2$\frac{1}{2}$	2 3 0
36	$\frac{1}{4}$-3$\frac{1}{2}$	4 10 0
48	1-5	6 14 0

Spare Jaws, Frames, Handles and Nuts can be supplied.

CHAIN PIPE WRENCH

No.		30	31	32	33	33$\frac{1}{2}$	34
For Pipe sizes	in.	$\frac{1}{8}$-$\frac{3}{4}$	$\frac{1}{8}$-1$\frac{1}{2}$	$\frac{1}{4}$-2$\frac{1}{2}$	$\frac{3}{4}$-4	1-6	1$\frac{1}{2}$-8
Price	each	29/6	39/-	55/-	78/-	99/-	125/-
Extra Chains	,,	8/3	11/-	16/3	28/3	39/-	50/-
Extra Jaws	per pair	11/-	19/6	30/6	45/-	53/-	61/-

BARNES' PATTERN PIPE CUTTERS

Fitted with Three Cutter Wheels

No.	Pipe Sizes inches	Approx. Weight lb.	Price Complete £ s. d.	Extra Wheels Per doz. £ s. d.	Extra Pins Per doz. s. d.
1	$\frac{1}{8}$-1	3	1 13 6	1 1 6	7 6
2	$\frac{1}{2}$-2	5	2 2 6	1 5 6	7 6
3	1$\frac{1}{2}$-3	8$\frac{1}{2}$	3 11 0	1 13 6	7 6
4	2$\frac{1}{2}$-4	14	7 2 0	2 2 0	14 0
5	4-6	23	10 10 0	3 3 0	14 0
6	6-8	28	14 0 0	3 3 0	14 0

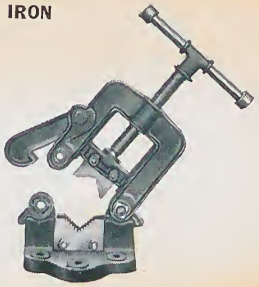
IDEAL BURRING REAMER

Now that the use of small sizes of pipe is so general, it is of the utmost importance that the full area should be available, as the internal area is frequently reduced by 25 per cent. if the burr is not removed.

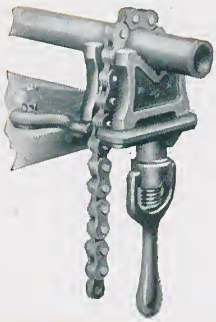
For $\frac{1}{4}$"–2" pipe, PRICE **£2 7s. 0d.** each.

HINGED PIPE VICES

MALLEABLE IRON



No.	Pipe Size inches	Approx. Weight lb.	Price £ s. d.
21½	⅛-1½	5	2 1 0
22	⅛-2	8	2 8 6
22½	⅛-2½	10	2 16 0
23½	⅛-3½	18	3 19 6
24½	⅛-4½	25	5 18 0
26	⅛-6	40	12 0 0

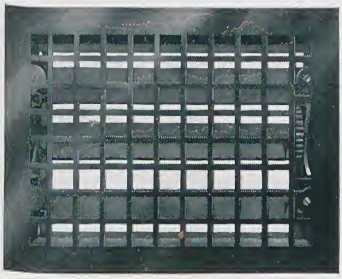


CHAIN PIPE VICE

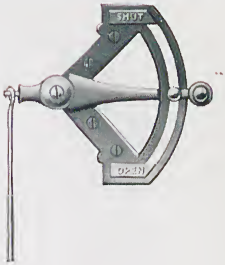
The Chain Pipe Vice embodies in compact and convenient form every requirement of a Pipe Fitter's Vice.

It is made of drop-forged steel, with carefully hardened and tempered jaws. The chains are made from high-tensile steel, and are tested and guaranteed.

No.	Capacity Size Pipe in.	Approx. Weight lb.	Price Complete £ s. d.	Extra Chain with Screw £ s. d.	Extra Jaws Per Pair £ s. d.
1	⅛-2	4	1 17 0	13 6	15 6
2	¼-4	10	3 19 6	1 5 0	1 17 6
3	½-6	18	7 2 0	2 7 6	3 3 0
4	½-8	30	9 10 0	3 3 0	4 15 0



Register



Regulating Quadrant

COMPLETE REGISTERS

available in the following sizes:—

Size of Openings in Inches

6 × 8	6 × 18	9 × 14	10 × 16	12 × 18
6 × 9	8 × 12	9 × 18	10 × 18	14 × 18
6 × 12	9 × 9	10 × 12	12 × 12	16 × 18
6 × 14	9 × 12	10 × 14	12 × 14	18 × 24

Registers can be provided, drilled with four holes for fixing screws.

IDEAL REGULATING QUADRANTS

For fixing on the right-hand side, either above or below the Register.

CAST-IRON WALL FRAMES

Available for use with all sizes of Registers listed above.

DETACHABLE WALL GRATINGS AND FRAMES

School Board Pattern with four brass screws.

These Gratings and Frames are of cast iron. The face can be detached from the body by removing the brass set-screws.

Supplied in Black or Galvanised finish.

Sizes in Inches

$4\frac{1}{2}$ × 9	9 × 12	12 × 18
6 × 9	9 × 14	14 × 14
6 × 12	9 × 18	15 × 15
9 × 9	12 × 12	18 × 18

TELEGRAPH CODE

Telegraphic Address: "IDEALSTAN"

QUOTATIONS AND CORRESPONDENCE

	CODE WORD
Answer by first Post	Quagmire
At what price and how soon can you furnish	Quackery
Send us loose sheets showing —— Radiator	Quotient
Quote best price on	Quadrate
Referring to your telegram of	Quakerism
,, ,, ,, letter of	Qualify
,, to our telegram of	Quandary
,, ,, ,, letter of	Quarried
See our letter of —— giving full particulars	Quaintly
Will wire you to-morrow morning	Quaffed
Wire reply	Quadroon

ORDERS AND FORWARDING

Add to our order (No. or date and your Ack. No.)	Fabricate
Change our order of (No. or date to read and your Ack. No.)	Fabulous
Enter order as per our inquiry of	Fabaceous
,, ,, ,, ,, your quotation of	Fabliaux
Forward by Parcel Post	Facetious
,, ,, Goods train	Factotum
,, ,, Passenger train	Faintness
,, ,, Steamer	Falconry
,, immediately	Fallible
Hold for instructions our order (No. or date and your Ack. No.)	Falsetto
Hold our order (No. and your Ack. No.) until (date)	Fattiness
How soon can you forward	Familiar
Omit from our order (No. or date and your Ack. No.)	Fameless
Prepare for immediate despatch	Fantasia
Referring to your letter of (date) your order (No.) was despatched	Feculent
Referring to your telegram (date) your order (No.) was despatched	Ferreter
Referring to your letter (date) your order will be despatched	Feelingly
Referring to your telegram (date) your order will be despatched	Felucca
Referring to your telegram to-day we can ship by steamer this week	Favourless
Referring to your telegram to-day we can ship by steamer next week	Fearless
Referring to your order yesterday we can ship by steamer this week	Fawner
Referring to your telegram yesterday we can ship by steamer next week	Feathery
Trace our order (No. or date and your Ack. No.)	Famished
When and by what route did you forward our order (No. or date)	Fallow
When will our order (No. or date and your Ack. No.) be forwarded	Fanatical
Will send forwarding instructions by Post	Fascinate
You may substitute on our order (No. or date)	Fasicule
Will forward your order (No. or date) on	Febrile

A2134. 1956